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A QUIZ BOX.

UNDER this heading we inaugurate this week a department intended especially for students of pharmacy. This department will be devoted to the publication of a series of questions on pharmacy, to be followed later by the correct answers together with the names of those whose answers attain an average rating of 75 per cent

These questions will appear *each week*, the replies to each particular set together with the names of the successful student appearing on the third week after the publication of the questions.

We are prompted to inaugurate this department by the frequent requests that are sent in by students for the publication of examination questions and by the belief that such a department will prove of value in encouraging home study among drug clerks whether they be in attendance at college or not. The course will also serve to keep alive the interest of the student in his studies through the summer vacation.

We ask all our readers to aid us in this department by sending in questions accompanied by answers which are suitable for publication.

In order to give added zest to the contest we will award the following prizes at the close of the current volume on July 1, 1894:

First Prize.—A new Dispensatory, latest revised edition, will be awarded to the person who makes the highest general average of answers for the entire series of questions as published from March 22 to June 28, 1894.

Second Prize.—Copies of Harrop's "Monograph on Flavoring Extracts," will be awarded to the three persons who make the next highest general average for the entire series of questions.

Third Prize.—A copy of Heebner's Manual of Pharmacy and Pharmaceutical Chemistry will be awarded to the person sending in the most satisfactory replies to any three sets of questions but who does not win either of the other prizes.

Fourth Prizes.—A copy of Lloyd's "Elixirs" to every person who sends in an answer to *every one* of the questions published in the entire series and whose answers average 66 per cent.

PHARMACEUTICAL FELLOWSHIPS.

CORNELL UNIVERSITY established some years ago a department of pharmacy in which there were a dozen or so professors, including a professor of cryptogamic botany and, we believe, one on geology, but with no professor of pharmacy. This was made the subject of some satirical comment at the time, but after all is it not possible that the university authorities were justified in their action from their own point of view, which we may assume to have been that of earnest advocates of a higher education.

The facts as they would present themselves to the average university authority, drilled as he must have been into a profound respect for systematic study and for "degrees," would seem to justify him in the conclusion that a class of men content with less than a professional degree could scarcely furnish a professor from its own ranks whose intellectual attainments entitled him to rank with the other professors in the faculty of the university.

It lies within the province of the pharmaceutical schools of this country to refute any such conclusions. Let these schools provide advanced courses of study for such as may choose to follow them, and confer an adequate degree on such as pursue this course. An earnest worker in one of the large eastern colleges has long been an ardent advocate of the establishment of an advanced course for the degree of Doctor in Pharmacy. A western institution has already taken the initiative in this direction, and it is to be hoped that the standard of proficiency there set may be so high as to command for the institution and for its degree the respect of the world.

There was published in the issue of the *Pharmaceutische Rundschau* for March an able and thoughtful article from the pen of Dr. EDWARD KREMERS which is worthy the serious consideration of every earnest student of matters pharmaceutical and which bears directly upon this subject of higher pharmaceutical education.

Among the suggestions offered in this article are that the larger colleges turn over their entire plant to the State on the condition that the State should properly maintain and support the school thereafter, that the colleges substitute post-graduate fellowships for the money or other trivial prizes now bestowed, and that the American Pharmaceutical Association grant a foreign or traveling fellowship instead of bestowing the grants for original essays, as is now done in small or divided proportions.

The proposal to establish pharmaceutical fellowships as a means of encouraging advanced study was made two years since by Dr. FRED. HOFFMAN, and has not, we think, been given the serious consideration which it deserves.

The good effect of the adoption of this plan by the leading colleges and by the American Pharmaceutical Association would by no means be confined to the particular students who won the fellowships but would be exerted among the large

number who would become contestants. Such a move would result in an awakening among the young men of the county of an interest in higher pharmaceutical eduaction that would soon produce profound scholars who would be a source of profit and pride to pharmacy in the United Stat-s.

The advocates of higher pharmaceutical education are met with the objection that there are no students who would care to pursue an advanced course. What if this be true under existing conditions, (and we are by no means prepared to admit that it is true) it does not follow, when the student has the opportunity of such a course held up before him during his whole collegiate term, not as a vague and remote possibility, but as an actual and immediate opportunity, that there will be no matriculants. If the suggestion of Dr. HOFFMAN be acted upon and the, say three hundred dollars, presented by the college in various prizes each year, be awarded in one sum as a post-graduate fellowship conditioned on the recipient devoting six months or one term to study with his alma mater for the degree of Doctor of Pharmacy,the college will itself have provided the first matriculant for the advanced course.

Here, then, is an opportunity for some progressive college to do something practical for the cause of higher education and at the same time win for itself an enviable name as an advocate of that cause.

REGULATING THE USE OF OPIATES AND NARCOTICS.

IT is likely that another change will be made soon in the section of the Criminal Code of the State of New York relating to prescriptions of chloral, cocaine, opium and morphine, Mr. SAXTON having introduced a bill into the State Senate which he desires to have enacted as a substitute for the original section relating to the prescribing and dispensing of these drugs. The chief provisions of the substitute measure are: Any prescription containing any chloral, cocaine, opium and morphine shall state the date when it is issued and the name and place of residence of the person to whom it is issued. The drug is to be furnished only within two days after the date contained in the prescription; and the package containing the medicine must be labeled so as to show the particular form and quantity of the drug contained in each dose, "except where such drugs are contained in proportions which, because of other poisonous drugs in their composition, can only be used externally."

Any person violating the provisions of Mr. SAXTON'S bill will be declared guilty of a misdemeanor, a violation of its provisions being declared such.

Physicians will be disposed to object to the paragraph in the proposed measure which provides that:

"Every physician residing in this State who gives a prescription for opium in any form, cocaine or chloral shall keep a record of the same in a book kept for that purpose, giving the name of the patient and the date of each prescription."

The fact that the measure if it becomes law will compel physicians to record any prescriptions containing any of the drugs mentioned, without regard to the amount of schedule poison there may be contained in each, is sure to be felt with particular severity by the members of the medical profession.

The penalty attaching to a misdemeanor in this State is imprisonment for one year or a fine of $500, or both penalties combined.

THOUGHTS ON AN ELIXIR.

WE wonder if there is anything which exercises the minds of pharmacists more than the making of elegant elixirs (and of elixir of triple phosphates in particular). There is certainly no other subject upon which so much good pharmaceutical gray matter has been and is wasted. To the truth of which observation evidence is not wanting as instance the following:

"Kindly inform me in an early number as to why the National Formulary elixir of three phosphates is such an unstable preparation. I know this question has often been brought forward, but I have yet to see it satisfactorily settled. By replying you wil confer a great favor."

This is a sample letter taken from among a number of similar communications bearing upon the production of an unchangeable elixir of phosphate of iron, quinine and strychnine. We have also been asked the question by one or two pharmacists, Can the elixir of the three phosphates be prepared to react acid, alkaline or neutral to litmus paper? Others would like to know if it is possible to produce a liquid ferrous phosphate in a neutral solution, etc., etc.

Many have attempted to solve the problem of how best to obtain a clear water-miscible elixir by sacrificing alkaloidal strength to water solubility and appearance of the finished product. But preparations of this kind should not be labeled elixir of three phosphates, much less dispensed as such, since they bear no relation whatever to the semi-official compound or to the preparation which the physician had in mind when ordering the elixir.

The causes of failure in the preparation of a presentable and permanent elixir as told by different experimenters would form an amusing chapter in the history of elixir making. Some who have convinced themselves of the hopelessness of attempting to produce a satisfactory compound according to the prescription of the National Formulary are disposed to lay the burden of blame on the compilers of that very practical compendium, averring that no pharmacist can look for success in the manufacture of this particular elixir, if he follows faithfully the directions of the Formulary. Others, however, make less sweeping charges, contenting themselves with mild criticisms directed against the manufacturers of certain salts of iron, the phosphate being the one uppermost in their minds.

In all these different appeals to us only the most superficial points have been touched upon. Experimenters who have once or twice attempted to make the elixir of the National Formulary and have failed to turn out a satisfactory solution have allowed themselves to become discouraged without examining into the causes of their failure. Our own experience would lead us to believe that other things besides the formula are at fault Some regard should be paid to the selection of chemically pure preparations of the substances which go to make up the elixir—there is the salt of iron for example; the properties of this salt are known to vary with the labels of the containers, its solubility and general behavior being very variable.

Many seem to think that the essential oils which form part of the aromatic elixir are a source of mischief, because, perhaps, the majority of the essential oils of the market are little more than turpentines age and other influences having operated to alter materially their chemical constitution.

We are of opinion, however, that these speculations, for no one will regard them as facts, will receive little consideration from practical workers; though reflection may convince them that they are worthy of some attention, especially when the extent to which the practice of adulteration in essential oils is carried is brought to mind. There is probably no other department of drugs in which adulteration is so widely or successfully practiced, and for this reason pharmacists should exercise extreme care in their choice of oils. But equal care should be exercised with regard to the selection of the other ingredients.

If those who have failed hitherto in their efforts to prepare a stable elixir with the ordinary salts of the market will but try the effect of using ingredients of known purity from first step to last of the process, their efforts, we can promise, will be attended with more favorable results.

The main object of these remarks is, of course, to direct more general attention to a preparation whose manufacture has been heretofore beset with difficulties,and to this end we would invite every pharmacist who has experimented with the elixir to favor us with a general account of the processes employed. In this way we hope to draw out practical suggestions on the subject,and it will afford us much pleasure to publish all communications on the subject which may possess the merits of brevity and practical application.

Written for the American Druggist and Pharmaceutical Record.

PHARMACEUTICAL ASSAYING BY ELECTROLYSIS.

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Each addition to the list of pharmaceutical substances having limitations as to purity and strength increases the importance of assay methods which are accurate and which involve a minimum expenditure of time and attention. The ordinary process of gravimetric analysis is, in many cases, too cumbrous for the limited amount of time at the disposal of the ever busy pharmacist. Commonly the substance which is sought is required to be precipitated in some insoluble form of known composition, washed free from adhering soluble matters, dried, ignited, and weighed. There may be and generally are losses resulting from the partial solubility of the precipitate in the wash water, and volatilization during the operations of drying and ignition. So, also, the weight of the end product may be increased through the addition of extraneous matter, as of filter ash. It follows, then, that the end product of a gravimetric analysis is, to a certain extent, the resultant of opposing tendencies, part of which increase and others of which diminish the final weight. Even the much simpler volumetric processes involve the preparation and keeping of a number of solutions of constantly changing concentration necessitating frequent redeterminations of their values. In addition to the time required both classes of operations generally require the unremitting attention of the operator from the beginning of the process to its close.

Up to the present time electrolytic methods have not received the attention which their applicability to pharmaceutical requirements deserves, probably from the opinion that they involve unusual difficulties of manipulation That this opinion is a mistaken one, and that they may be frequently applied to the analysis of pharmaceutical substances with an ease and accuracy not obtainable by the ordinary methods, is the object of the present paper.

The ordinary course of an analysis by electrolysis is exceedingly simple. An electric current, generally of very low tension, is caused to pass through a solution of the salt which is to be estimated, causing its decomposition and the deposition of the metal upon a weighed platinum electrode. When the decomposition of the electrolyte is ended the platinum plate and its film of metal are weighed and the known weight of the platinum subtracted. From the remainder, which is the weight of the metal deposited, the quantity of pure salt contained in the electrolyte may be obtained by the usual calculations In the case of substances which cannot be caused to deposit upon the platinum electrode, it is sought to combine them with metals in the form of salts which may be electrolyzed, and the amount of the electronegative constituent obtained by calculation from the weight of metal deposited. It is thus seen that, while the methods of electrolysis may have a somewhat limited application, they are simple in theory and the required operations are easily performed, besides being to a great degree automatic when once set in operation. The platinum apparatus as supplied by the makers is somewhat expensive, but with the simple forms described below the writer has found it possible to make analyses which were strictly comparable as to accuracy with determinations simultaneously made with the use of more expensive apparatus.

For the electrolysis of a common metallic salt three things are necessary : (1) A means of generating the electric current ; (2) a means of measuring the current ; and, (3) a platinum surface upon which the metal may be deposited. To these may sometimes be added a means of reducing the current when a very weak current is necessary.

GENERATING THE CURRENT.

Any of the common forms of battery may be used for this purpose, as the bichromate or bottle cell, the Leclanche, Bunsen, Grove, or some form of the Daniell, as the familiar gravity cell of the telegrapher. The storage cell is probably the most generally satisfactory, provided facilities exist for recharging. A half dozen of the common gravity cells will, however, be found sufficient to perform all the determinations ordinarily required. These may be had ready for setting up at a cost not exceeding 75 cents each, or, if the operator is fond of devising his own apparatus, may be cheaply constructed in the following manner :

For cells use tall quart or half gallon earthenware jars, or cut off the tops of half gallon acid bottles, of which there is generally a surplus about the store. For each jar obtain a strip of sheet copper about eight inches long and one inch wide. Roll the copper into a flat spiral and fasten to it a piece of copper wire long enough to reach to the bottom of the jar. The wire should be covered with a piece of rubber tubing to prevent corrosion. For the other element of each jar prepare a similar coil of sheet zinc, the heavier the better. To set up the battery place a copper coil at the bottom of each jar, cover the coil with crystals of sulphate of copper, suspend a zinc coil near the top of the jar by means of the wire which is attached to it, and fill the jar with soft water to the top of the zinc. Connect the several jars so that the zinc of one is joined to the copper of the next, and so on. A glance at the local battery of a telegraph office will make the arrangement plain.

For the electrolysis of iron and a few other metals it may sometimes be necessary to use a battery of higher electromotive force. Several Grove or Bunsen cells will generally answer for such cases.

MEASUREMENT OF THE CURRENT.

This may be accomplished in several ways, but the simplest method is by measuring the volume of oxy-hydrogen gas released from acidulated water by the current in a given time. Dealers in electrical supplies furnish the familiar Bunsen voltameter for this purpose at prices ranging from $3 to $8. A simple form of this apparatus which may be set up from materials to be found in every well equipped pharmacy has been constructed and used by the writer with very satisfactory results. There is needed a common burette, a tubulated bell jar, and two pieces of moderately heavy platinum wire. The bell jar may be improvised from a pint packing bottle by cutting off the bottom.

Through a sound cork which fits accurately the neck of the bell jar, or the neck of the bottle which serves as such, pass two stout platinum wires so that they project about one inch within the jar. Bend the ends of the wires which are to be within the jar into flat loops so that they shall face each other, about one half an inch apart, and without touching. Insert the cork tightly into the neck of the bell jar with the wire loops inside. Fasten the bell jar, open end up, with a burette clamp. Cover the platinum electrodes with a small glass funnel, and invert over the stem of the funnel a burette, and fasten in this position by means of a clamp.

Half fill the bell jar with water acidulated with sulphuric acid, and by suction fill the burette to the highest mark. The voltameter is now ready for action.

THE PLATINUM SURFACE.

The next requisite is the platinum surface upon which the metal is to be deposited. For this may be used a platinum crucible, a platinum dish or the piece of apparatus next described which will be found to answer the purpose very well. A piece of platinum foil, moderately heavy, about four inches long by two inches wide, is bent into the form of an open cylinder. Near the top the cylinder is pierced with two holes by means of which it is to be suspended with a piece of platinum wire which hooks into the holes like the bail of a bucket. This cylinder which serves as the cathode or negative electrode, looks when finished like a small tin pail without top or bottom and open along the side. For the anode or positive electrode bend one end of a stout platinum wire, about eight inches long, into a flat spiral long enough to move up and down inside the platinum cylinder without touching.

MOUNTING THE APPARATUS.

The apparatus is set up for work in the following manner: Through a good sized cork pass the straight end of the positive electrode just described and the end of the copper wire which leads from the zinc plate of the battery. The wires must not touch. Bend the end of the copper wire into a small hook and over this hang the bail of the platinum cylinder. The flat spiral of the anode is to be inside of the cylinder, near the bottom, but not in contact with it. Support the cork by a burette clump or other means so that the cathode and anode hang inside a small beaker which is to contain the electrolyte. Connect the anode with one of the wires of the voltameter and the second wire of the voltameter with the copper wire of the battery. If the directions have been followed, there is a continuous path for the current from the platinum spiral, through the voltameter, to the copper plate of the battery and through the battery to the platinum cylinder. When the electrolyte is poured into the beaker the circuit will be completed and the current will pass.

THE OPERATION.

Let the first experiment be the examination of a specimen of copper sulphate. Make a solution of two grammes, or less, of the salt in 50 Cc of distilled water and acidulate moderately with nitric acid. Pour the solution into the beaker which contains the cylinder and spiral, and raise the beaker so that the cylinder is two-thirds immersed in the solution. This completes the circuit, as is shown by the bubbles of gas which arise in the voltameter and by the red coating of copper which immediately begins to deposit upon the cylinder. Permit the current to pass for about ten hours, or until a fresh portion of the cylinder does not show a further deposit of copper when the liquid is raised in the beaker. The gas should be disengaged in the voltameter at the rate of about 0.3 to 0.5 C.c. per minute. Without interrupting the current, siphon off the acid liquid, meanwhile passing in fresh water until the copper is well washed, remove the cylinder, dry and weigh. To obtain the weight of the film of copper, place the cylinder in dilute nitric acid until the copper is dissolved, dry and weigh the cylinder and subtract its weight from that previously obtained.

From the remainder, which is the weight of the copper, calculate the amount of pure salt taken for analysis.

The preceding experiment may serve as an example of the general method of determining electrolytically those metals which can be precipitated directly from their salts in the presence of free acids. Some elements as the halogens in their binary combinations, cannot be deposited upon the platinum electrode by the electric current, but may be determined indirectly in the following manner: Precipitate the halogen as its silver salt, *i.e.*, as iodide, bromide or chloride, and dissolve the precipitate in an excess of alkali cyanide. Electrolyze the cyanide solution, and calculate the weight of the halogen from the weight of the silver deposited.

Other electro-negative elements and radicals may be determined in a similar manner, provided they can be obtained in the form of a definite compound with a metal which can be determined electrolytically.

Among the substances which may be conveniently estimated by the electrolytic method are the compounds of mercury, silver, lead, antimony, tin, copper, cadmium, bismuth, iron, manganese, zinc, nickel, and cobalt. One very great advantage of the electrolytic over the ordinary gravimetric method is the fact that the presence of the radicals of organic acids, as oxalic, citric, and tartaric, does not usually interfere with the precipitation of the metals, and in some cases actually assists in their deposition. For this reason the method ought to give good results in the examination of the scale compounds of iron.

If much work is to be attempted some authority upon the general subject will be necessary. For this purpose the excellent little manual of Edgar F. Smith on "Electro-Chemical Analysis," or Herrick's translation of Classen's "Quantitative Chemical Analysis by Electrolysis" are available.

Pharmaceutical Progress.

Russian Fir Tar.—This tar is obtained chiefly from *Pinus sylvestris* as a syrupy, reddish-brown liquid, of 1.085 sp. gr., containing an amount of acid varying from 2 to 5 per cent. The phenols it contains are guaiacol and its homologues (Nenki and O. Lieber, *Chem. Zeitung Report*, 18, 8).

Thermodin, $C_{13}H_{17}NO_4$, is acetyl para ethoxyphenyl urethane—

$$C_6H_4 < \begin{matrix} O.C_2H_5 \\ NCOCH_3.CO.OC_2H_5 \end{matrix}$$

It crystallizes in needles, is free from smell and almost tasteless, melts at 86°–88°, and is sparingly soluble in water. It is an efficient antipyretic, operating within an hour, and has been found useful in cases of influenza (*Merck's Bericht*, 1893).

Mercurialis Annua, L.—G. de Letter of Brussels considers that this plant properly collected, dried and preserved, constitutes an economical laxative medicine. Twenty to thirty grammes of the dried herb, in aqueous infusion is suggested as a proper dose or ten to twenty centigrammes of an alcoholic extract. A medical authority is also quoted to the effect that a decoction of the fresh herb possesses both laxative and diuretic properties (*Journal de Pharm. d'Anvers, l.*, 30).

Extract of Logwood.—E. Donath finds that commercial extract of logwood contains a notable quantity of nitrogen in a soluble form, and that the ash is higher in proportion, and richer in chlorides and phosphates than it was in an extract prepared by himself. These differences he attributes to the sprinkling of the logwood with putrid urine during the process of fermentation to which it is subjected, in order to convert the hæmatoxylin into hæmatëin (*Chemiker Zeitung*, xviii., 277).

Kosin or Koussin—Max Leichsenring has re investigated kousso flowers, and isolated a crystalline inactive body, protokosin, and an amorphous highly active substance kosotoxin; from the latter a yellow crystalline inactive body apparently identical with commercial kosin, could be obtained by boiling with hot baryta water, purifying and crystallizing. The author concludes that commercial kosin is not a natural constituent of kousso flowers, but is produced from one of the constituents during the process of isolation (*Archiv.*, ccxxxi., 50).

Iodocresol.—Some iodine compounds of a new class, characterized by their capability of crystallizing, and freedom from color or smell, have been obtained by the firm of Bayer & Co. by operating upon phenols in dilute solution with limited proportions of caustic soda or alkaline carbonate. A solution of ortho-oxy-paratoluylic acid (meta cresotinic acid) in 1½ mol. of alkaline carbonate or 3 mol of caustic alkali yields, when acted upon with iodine, triiodo cresol, $C_6HI_3.CH_3.OH$, which is a substance sparingly soluble in alcohol or petroleum sprit, readily soluble in ether, benzene, chloroform, or fat oils. (*Pharm. Zeit.*)

Preparation of Oxygen.—M. Delamotte recommends pharmacists to prepare oxygen for medicinal purposes by allowing water to fall intermittently and in small quantities on sodium peroxide, the reaction being checked when necessary by mixing the compound with an equal quantity of sand. This method is said to give a pure product in a brief time. Dr. Bardet prefers to add water to a mixture of fifty grammes of barium dioxide with sixty of potassium permanganate. The gas thus rapidly given off in the cold contains a little ozone, but is said to be sufficiently pure to be respired (*Répertoire*. [3]. vi., 54).

Artificial Diamonds.—H. Moissan deals with the results of his latest attempts to form diamonds artificially. Under various conditions he has been able to obtain a transparent black variety of carbon, certain specimens of which present a distinctly crystalline appearance. The density of these is between 3 and 3.5, they scratch the ruby, resist the action of potassium chlorate and fuming nitric acid, and burn in oxygen at a temperature near 900° to produce four times their weight of carbon dioxide, in all these respects according exactly with natural diamonds, which alone are known to possess similar properties (*Comp. rend.*, cxviii., 320).

Ipecacuanha and Senega.—A. Andrée calls attention to an admixture of undulated ipecacuanha root (*Richardsonia scabra*), with senega root, in a parcel sent out by a New York house, the ipecacuanha being present in a notable proportion. The senega root is described as not presenting identical characters with the official article, being harder, more fibrous, and not possessing generally the keel by which the root is usually recognized. Portions of stem attached to the root were colored violet. Andrée suggests that the roots may possibly be obtained from a distinct species of *Polygala*, growing in the same districts as the *Richardsonia* and collected at the same time as the roots of the latter (*Apot. Zeit.*, ix., 23).

Carbonic Esters of Pyrocatechin and its Alkyl Ether.—These compounds are obtained by v. Heyden by acting on pyrocatechin, its mono alkyl ether, or the methyl ether of homopyrocatechin with phosgen under pressure and in presence of an indifferent solvent, such as benzene—

$$2C_6H_4.OH.OC_2H_5 \Big\} + \Big\{ = \Big\} CO(OC_6H_4O.C_2H_5)_2 + 2HCl$$
$$COCl_2 \Big\}$$

The substances thus obtained are colorless, insoluble in water, soluble in alcohol or ether, and are distinguished from free phenols by their neutral reaction, the absence of corrosive action on the skin, and of taste or smell. They are, therefore, susceptible of useful application medicinally, as they are decomposed in the organism with elimination of the corresponding phenols.

East African Gum.—C. Hartwich reports upon a gum resembling tragacanth recently sent from East Africa. It differed from tragacanth in containing comparatively few pieces of the characteristic flattened shape of true tragacanth; the majority consisted of rounded or pear-shaped whitish masses; the gum swelled to a stiff jelly with two hundred times its weight of water, and was soluble only after prolonged boiling with much water. It appeared to consist mostly of bassorin, the formation of which began in the middle lamella, and proceeded to the primary and secondary deposits in the cell-wall. From the mode of formation of the gum, and the anatomical characters of the fragments of bark found in it, the conclusion was drawn that it was produced by a species of *Sterculia* (*Archiv.*, ccxxxi., 43).

Sapotin.—This is the name given to a glucoside extracted by G. Michaud from the seed contained in the Sapodilla Plum, the fruit of *Achras Sapota*. This tree has a febrifrugal bark, and diuretic and aperient seeds. The glucoside was obtained in minute crystals, melting at 240°. In alcoholic solution they are lævogyre, $[a]_D = 32.11$. Sapotin is very soluble in water, less so in alcohol, and insoluble in ether, benzene or chloroform. Acetate of lead forms a gelatinous precipitate in an aqueous solution of the compound, the precipitate being soluble in excess of the reagent. The formula of sapotin is $C_{29}H_{52}O_{20}$, and when boiled with dilute sulphuric acid the compound decomposes, glucose and sapotiretin, $C_{17}H_{32}O_{10}$, being formed, the latter insoluble in water, but very soluble in alcohol (*Am. Chem. Journ.*, xiii., 572).

False Sarsaparilla.—C. Hartwich describes a false sarsaparilla from Jamaica, which has recently made its appearance in Hamburg. It consisted of cylindrical pieces of root measuring up to nineteen inches in length and three-sixteenths to three-quarters of an inch in thickness, and brown or greyish brown in color. The larger pieces were covered with projections which proved to be small galls. The cortex of the root contained numerous schizo lysigenous ducts, which were surrounded by a sclerenchymatous sheath, and in the earlier stages were filled with resin. The central column showed a very small pith, radial fibrovascular bundles and numerous resin ducts. The root was identified by these characters as a *Philodendron*, but the species could not be determined (*Archiv.*, ccxxxi., 42).

Creasote Pills.—For obtaining very small creasote pills Fauel (*Rev. Pharm. de Gand*) recommends the use of a mass obtained by dissolving five parts of sugar in twenty-four of water and then adding eleven parts of gelatin. One part of this, used warm, is said to emulsify two parts

of creasote, and by the addition of licorice powder a convenient pill-mass may be obtained which contains a large proportion of the active ingredient. When creasote is prescribed in pilular form, together with tannin and iodoform, Violé (*Bull. de Pharm. de Bordeaux*) absorbs the first by means of animal charcoal, then adds the other ingredients, and finally masses the whole with turpentine. The charcoal is said to mask the taste of the creasote to some extent, and by rolling the pills in magnesia, silvering, or coating with tolu varnish it may be still further covered.

Salicylic Esters of Monochlor Phenols.—Of the three isomeric forms of oxybenzoic acid, the ortho compound or salicylic acid is known to have the most decided antiseptic properties, while among the cresols the meta compound is the most powerful, and it was to be expected that the monochlorinated phenols would show similar differences. Karpow has, however, ascertained that the para compound is the most powerful of them. The salicylic esters of two monochlor phenols have been examined, with the result that the orthochlor salol (m. p. 53°) and parachlor salol (m. p. 71°) possess a much greater disinfecting power than salol. They are both colorless crystalline substances, insoluble in water but readily soluble in alcohol or ether. The solutions give with ferric chloride a reddish-violet coloration (*Pharmacent. Zeitung*, xxxix, 81).

Simple Method of Sterilizing Water.—M Traube states that by mixing water with chloride of lime in the proportion of half a milligramme to 100 Cc, all microorganisms present are destroyed within the space of two hours. Water abounding in bacteria, after having been thus treated, will be found perfectly sterile when tested in suitable culture media. The amount of active chlorine present is reduced within the two hours by about 9.1 per cent., and the remainder may be neutralized by the addition of sodium sulphite in sufficient amount. The addition of an excess would not be detrimental, as it would be soon converted into sulphate by the oxygen dissolved in the water. After treatment in this manner, water has a pure taste, and a perfectly neutral reaction. Whether pathogenic bacteria are completely destroyed by such treatment has not been exactly ascertained (*Zeitschr. Hygiene, etc.*, xvi, 149).

Aseptic Hypodermic Solutions.—At a recent meeting of the *Société de Thérapeutique* a communication was made by Drs. Berlioz and Duflocq, in which they described the methods adopted by them for administering medicines subcutaneously without risk of septic poisoning. The solutions are prepared under conditions of absolute asepsis and preserved in tubes of yellow glass, containing from two to four cubic centimeters each. The neck of each tube is drawn out to a tapering point and, after filling, sterilization is effected before closing in an autoclave or a vacuum apparatus according to the volatility of the liquid When required for use the neck of the tube is broken off and the needle-point of the previously sterilized syringe is immediately introduced into the opening thus made. Full working details, with illustrations of the apparatus employed, are given by the authors (*Répertoire*, [3], vi., 49).

Adulteration of Kousso.—Professor Arthur Meyer and Hendrik Sandlund have drawn attention to the difficulty that at present exists of procuring kousso in bundles, and point out the fact that an adulteration with male flowers can be more easily effected when the flowers are loose than when the whole inflorescence is packed in hanks. From an examination of commercial loose kousso, they have found that such an adulteration actually takes place to the extent of as much as 12 per cent. These male flowers are unexpanded; the sepals of the outer calyx are distinguished from the corresponding organs of the female flowers by a thick covering of short unicellular hairs. Occasionally the female flowers develop stamens, in which, however, no pollen is formed. The presence, therefore, of sepals with dense short hairs of pollen, and of the tissue of the filament in more than very small proportion, are sufficient to distinguish the male flower, either in the loose or powdered kousso (*Pharm Zeit.*, No. 99, 1893).

Influence of Solvents on Germicides.—That the liquids employed as solvents of carbolic acid sometimes affect its properties as a germicide has been demonstrated by several writers since Koch alluded to the matter in 1881. Recent experiments by P. Lenti, of the University of Naples, have demonstrated that absolute alcohol completely neutralizes the germicidal action of both corrosive sublimate and carbolic acid with regard to anthrax spores, and that a considerable proportion of water must be added before any germicidal action can then take place. Glycerin impedes the action of sublimate when less than forty per cent. of water is present, and of ten per cent. solutions of carbolic acid when they consist of less than eighty per cent. of water Carbolic acid and lysol also lose their disinfecting property entirely when dissolved in olive oil. It would appear, therefore that alcohol, glycerin and fatty bodies are unsuitable ingredients of liquid disinfectants (*Rev. d'hygiene*, through *L'union pharm.*, xxxv, 58).

Essence of Lemon.—V. Oliveri has examined the essential oil of *Citrus Limonum* and describes it when freshly prepared as neutral in reaction, not reducing ammoniated silver nitrate, of density 0.86 to 1.60, and having a specific rotatory power varying between $[a]_D = +69°.75$ and 72°.10 at 16° It oxidizes in air, becoming faintly acid, and distills entirely with the vapor of water. By fractional distillation the oil was separated into three portions The first (constituting one fifteenth of the whole) passed over at 170°-170° 5, and consisted of limonene, $C_{10}H_{16}$; density at $0° = 0.8867$; $[a]_D = +66°.82$ at 16°. It formed a tetrabromide, $C_{10}H_{16}Br_4$, and a dichlorhydrate, $C_{10}H_{18}Cl_2$. The second fraction (nine-tenths of the total amount) distilled at 176°-178°, and also consisted of limonene; density 0.899; $[a]_D = +76°.75$. The third fraction distilled at 240° 242°, and is described as sesquilimonene. $C_{15}H_{24}$, a viscid liquid of density 0 9847, optically inactive. This constituted a very small proportion of the oil and formed an uncrystallizable oily tetrabromide and a similar dichlorhydrate (*Gagg. chim ital.*, through *Bull. Soc. Chim. de Paris*, [3], xii., 46)

Aconitum Septentironale.—This plant closely resembles *Aconitum Lycoctonum*, but the flowers are blue or violet, sometimes white. It grows in Sweden and Norway, Northern Russia, and some parts of Austria H. V. Rosendahl has obtained from the rhizomes three bases: 1. Lappaconitine, $C_{34}H_{48}N_2O_8$, in the form of hexagonal prisms, melting at 205°. A solution of the base in alcohol or ether has a reddish-violet fluorescence. When heated with caustic alkalies lappaconitine yields to other bases and an acid. 2. Septentrionaline, $C_{31}H_{45}N_2O_9$, amorphous, melting at 128.9°, very soluble in alcohol or ether, and in 58 parts of water; has a bitter taste, and local anæsthetic action. Alkalies convert it into two other bases and a crystallizable acid, which gives a bluish violet color with ferric chloride. 3. Cynoctonine, $C_{36}H_{55}N_2O_{13}$, amphorous, melting at 137°, readily soluble in water or alcohol, but only in 1373 parts of ether. Mixed with fuming nitric acid and evaporated the residue becomes blood-red on adding alcoholic solution of caustic potash. Lappaconitine is colored yellowish-red by sulphovanadic acid, afterwards becoming green Septentrionaline gives a cherry-red with furfurol sulphuric acid (*Apotheker Zeitung*, ix., 112).

Compounds of the Citral Series.—F. Tiemann and F W. Semmler describe the citral or geraniol obtained from lemon oil or lemon grass oil as an aldehyde having the composition $C_{10}H_{16}O$. It is nearly colorless, slightly soluble in water, but readily soluble in alcohol, ether, or chloroform. It is optically inactive. The optically inactive geraniol, $C_{10}H_{18}O$, is the alcohol corresponding to citral, and it is convertible into citral by oxidation with chromic acid, while it can be reproduced from citral by reduction with sodium. Optically active alcohols of the formula $C_{10}H_{18}O$ have been obtained by Eckart and Semmler—rhodinol, feebly lævo rotatory, from rose oil; coriandrol, a dextro-rotatory unsaturated alcohol, from coriander oil; linalool, aurantiol, and lavendol from bergamot, petitgrain, and lavender oils; also nerolool, the lævorotatory unsaturated alcohol, from neroli oil These optically active alcohols of the formula $C_{10}H_{18}O$ all yield citral by careful oxidation. When citral is oxidized below 0° in acetic acid solution, with chromic acid it yields methyl heptylene ketone and a substituted glyceric acid, chiefly geranic acid. $C_{10}H_{16}O_2$, in the form of a colorless oil, readily soluble in alcohol, ether, benzene or chloroform. By destructive distillation citral yields carbonic acid and a hydrocarbon, C_9H_{16}, geraniolene, of 0.757 specific gravity at 20°, boiling at 142° 143° (*Berichte*, xxvi., 2708).

Kapok-oil.—Certain plants of the *Malvaceæ* resemble those classed under the title *Gossypium* (the true cotton plants) in possessing a filamentous covering on their seeds. Inferiority in mechanical properties, *e.g.*, length and strength of fiber, prevents the use of this material for the same purposes as cotton. The best known of these plants is the *Kapok* (*Eriodendron anfractosum*, Dec., *Bombax penandrum*, L.), which grows in the Dutch East Indies; its cotton is used for stuffing beds and mattresses in place of horsehair. The seed itself is similar to cottonseed, in that oil can be expressed from it, such oil being used as a food, and for soap-making in Holland. As will be seen from the analytical constants obtained on the examination of the oil, it is of the same class as cottonseed-oil. The sample examined by the author possessed the following characteristics:

The oil was of greenish yellow color, and slight inoffensive smell and taste. It was viscous and turbid, becoming clear, however, on standing from the separation of stearin, analogous to cottonseed stearin. When treated with sulphur chloride or sulphuric acid, Kapok oil evolves considerably more heat than cottonseed oil.—R. Henriques (*Chem. Zeit.*, 1893, xvii., 1283).

Isoborneol.—By heating camphor with a mixture of acetic acid and a small quantity of mineral acid, J. Bertram and H. Walbaum have obtained an ester having the formula $CH_3COOC_{10}H_{17}$, and by heating it with alcoholic potash they obtained a solid alcohol, $C_{10}H_{18}O$. It closely resembles borneol, but is not identical with it. From solution in petroleum spirit it crystallizes in thin feathery laminæ, is readily soluble in alcohol, ether, chloroform, or benzene, and insoluble in water. It melts at 212°, and sublimes readily. It combines with chloral or bromal, forming well defined addition products similar to those obtained by Haller and Minguin with borneol. By treatment with dehydrating agents, such as zinc chloride isoborneol is readily convertible, with separation of water, into camphene. Boiled with nitric acid, or by the action of chromic acid, isoborneol is converted into a ketone, $C_{10}H_{16}O$, which cannot be distinguished from ordinary laurel camphor. By reduction with sodium this camphor yields a mixture of borneol and isoborneol, just as laurel camphor does, and both these forms of borneol yield by oxidation the same camphor. The borneol of commerce was ascertained to be a mixture of borneol and isoborneol. The above described conversion of camphor into an acetic ester and then into isoborneol is turned to account for the detection of camphor in essential oils. In this way the authors have found camphor in citronella oil, ginger oil, kesso oil from Japanese valerian root, and oil of camphor. When pinene is present in large amount some difficulty arises in the application of this method from the hydration of this terpene to terpineol, which has about the same boiling point as isoborneol, and is capable of holding in solution a large proportion of isoborneol (*Journ. prakt. Chem.*, 49, 15).

Guaiacol.

This constituent of beechwood creasote was formerly described as a liquid until Behal and Choay obtained it in a solid crystalline state (*Pharmaceutical Journal*, lii., 805). It is now prepared synthetically by the reaction of methyl iodide with pyrocatechin—

$$C_6H_4\begin{matrix}OH\\OH\end{matrix} + CH_3I = C_6H_4\begin{matrix}OCH_3\\OH\end{matrix} + HI$$

Merck (*Bericht*, 1893) describes the product as melting at 33° C. and boiling at 205° C. A one per cent. alcoholic solution mixed with a few drops of two per cent. solution of ferric chloride and dilute hydrochloric acid becomes immediately blue, then green and yellow. The amount of guaiacol in the commercial article known by this name does not appear to be more than about 30 per cent.

PREPARATION OF GUAIACOL.

By fractional distillation of commercial guaiacol the portion passing over between 200° and 205° is a colorless refractive liquid which still contains an admixture of cresols. Guaiacol may, however, be obtained chemically pure by heating equal molecular proportions of pyrocatechin, the sodium salt of methyl sulphuric acid, and caustic soda. The reaction taking place is represented by the equation—

$$\left.\begin{matrix}C_6H_4\begin{matrix}ONa\\OH\end{matrix}\\CH_3NaSO_4\end{matrix}\right\} = \begin{matrix}C_6H_4\begin{matrix}OCH_3\\OH\end{matrix}\\Na_2SO_4\end{matrix}$$

Thus prepared guaiacol is a white crystallizable substance, melting at 28°.5 and boiling at 205°.

Hitherto the production of pyrocatechin has been too costly for practical application of this method, but it is now obtainable from derivatives of benzene, or toluene, as the other isomeric dioxybenzenes, resorcin, and hydroquinone have been obtained. By acting upon paraoxybenzoic acid—prepared by treating sodium phenol with carbonic acid—with bromine it is converted into bromoparaoxybenzoic acid, the bromine taking the ortho position relatively to the hydroxyl group On melting this product with caustic soda, sodium pyrocatechin is formed, which is the material required for the preparation of guaiacol.

Another method is that of Baum, who starts with metaoxybenzoic acid obtained from chlorinated toluene The mixture of benzal chloride and benzene trichloride is heated under pressure with lime, and thus the benzal chloride is converted into benzaldehyd, and the benzene trichloride into benzoic acid By treatment with sulphuric acid metasulphobenzoic acid is formed, and by melting that with alkali it is converted into metaoxybenzoic acid, the sulpho group being replaced by a hydroxyl group. By dissolving the metaoxybenzoic acid in carbon tetrachloride and adding bromine, parabrom-metaoxybenzoic acid is formed, and by heating this under pressure with caustic soda the sodium salt of protocatechuic acid is formed, which by further heating passes into sodium pyrocatechin.

According to a third method of Baum's, alpha-phenol-disulphonic acid is melted with caustic soda and the pyrocatechin sulphonic acid so produced is converted into pyrocatechin by heating with dilute mineral acids. Chemically pure guaiacol is described by Seifert as having a melting point of 32°. It retains the liquid condition at -2°, but immediately solidifies when a crystal is dropped in, the temperature rising to 27°. The specific gravity of guaiacol in a state of superfusion is 1.149 at 15°, and by the addition of a few drops of water or alcohol it retains the liquid state longer. The boiling point is 204°-205°.

Liquid guaiacol mixed with twice its volume of pure sulphuric acid gives a colorless solution. Mixed with an equal volume of caustic soda (sp. gr. 1.3) it forms a clear solution, which rapidly solidifies to a crystalline mass. It mixes with twice its volume of glycerin (sp. gr. 1.19) without alteration of volume, and dissolves in eight times its volume of petroleum spirit, while ordinary commercial guaiacol requires only four times its volume for solution (*Pharm. Centralh.*, xxxv., 97).

Aconitine.

Freund and Beck have arrived at results in reference to the constitution of this base which introduce fresh discrepancies. It is stated that the investigation was commenced by Freund in 1891, and afterward discontinued for a time in consequence of his learning that A. Ehrenberg was engaged upon the same inquiry. The chief points to which attention is directed are the formula of aconitine and the products of its alteration. The results obtained by the authors in the analysis of the base approximate to the values calculated from Wright's formula for apoaconitine. $C_{33}H_{43}NO_{11}$, but they prefer to adopt a formula differing from those arrived at by Wright and by Dunstan chiefly in containing an additional atom of carbon, either $C_{34}H_{45}NO_{11}$, or $C_{34}H_{47}NO_{11}$, because it is more in accordance with the data obtained by analysis of the salts and with the products of alteration. By long continued boiling, Ehrenberg and Purfürst obtained from aconitine a crystalline product which they regarded as a mixture of two bases in the form of benzoates. Freund and Beck find that it is an individual substance, melting at 202°-203°, for the basic constituent of which they give the formula $C_{32}H_{45}NO_{10}$, and they represent its formation from aconitine by the following equation—

$$\left.\begin{matrix}C_{34}H_{47}NO_{11}\\H_2O\end{matrix}\right\} = \begin{matrix}CH_3.COOH\\C_{32}H_{45}NO_{10}\end{matrix}$$

and they refer to the formation of acetic acid as having been already indicated by Ehrenberg and Purfürst (*J. p. Ch.*, xlv., 606).

From examination of the amorphous base thus formed, of its crystalline benzoate, hydrobromide, and hydrochloride, they infer that it is identical with the substance to which Dunstan gave the name of "isaconitine," but they state that its composition is not correctly represented by the formula $C_{35}H_{45}NO_{12}$, and that it is not an isomer of aconitine, but probably the substance to which Wright assigned the formula $C_{31}H_{45}NO_{10}$, under the name of "picroaconitine." As the identity of isaconitine with that base has been established, Freund and Beck consider that the base they have obtained from aconitine by elimination of acetyl is picroaconitine, and they propose to revert to that name, altering Wright's formula to $C_{32}H_{45}NO_{10}$. The attempt to reproduce aconitine by acetylation of picroaconitine has hitherto been unsuccessful, the product being a crystalline substance of a different nature. The benzoic acid in the salt resulting from the hydrolysis of aconitine is attributed to another simultaneous mode of alteration, represented by the equation—

$$\left.\begin{matrix}C_{34}H_{47}NO_{11}\\H_2O\end{matrix}\right\} = \begin{matrix}C_6H_5.COOH\\C_{27}H_{43}NO_{10}\end{matrix}$$

The other product of this change has not been isolated, as it appears to hydrolyse and readily break up into acetic acid and the compound $C_{25}H_{41}NO_9$, which is also stated to be produced by the action of boiling alcoholic potash upon picroaconitine, as shown by the following equation—

$$\left.\begin{matrix}C_{32}H_{45}NO_{10}\\H_2O\end{matrix}\right\} = \begin{matrix}C_6H_5.COOH\\C_{25}H_{41}NO_9\end{matrix}$$

From the characters of this base it is considered by the authors to be identical with the substance to which Wright gave the name of aconine, but they state that the formulæ given by him, and subsequently by Dustan, do not correctly represent its composition. The general result arrived at by Freund and Beck is that aconitine is represented by the formula $C_{34}H_{47}NO_{11}$, and that its constitution is acetyl-benzoyl-aconine—

$$C_{25}H_{39}NO_9\begin{matrix}CO.CH_3\\CO\,C_6H_5\end{matrix}$$

The authors state that they intend shortly to publish a more extended account of their investigation, and they hope it may give rise to a discussion that will clear up the differences between their results and those obtained by Dunstan and his colleagues (*Berichte*, xxvii., 433).

Action of Sodium upon Water.—The cause of the violent explosion taking place when water is decomposed by sodium has not been clearly ascertained. As the result of some inquiry into this subject, M. Rosenfeld has come to the conclusion that a compound of sodium and hydrogen is formed, the sudden dissociation of which is the cause of the explosion (*Journ prakt. Chem.*, xlviii, 599).

On an Imperial "British Pharmacopœia." *

By Professor Attfield, F.R.S.

The British Pharmacopœia is produced under the medical acts of 1858 and 1862, the duty of providing for its compilation, and of deciding as to the necessity for, and the date of, any fresh edition being placed by the legislature on the general council of medical education and registration of the United Kingdom. For such initiation a medical body is, clearly, the most fit, especially when the actual compilation is carried out by pharmaceutical in addition to medical experts.

The current pharmacopœia is a condensation of the prior pharmacopœias of the three countries, namely, the London Pharmacopœia (1618, 1650, 1677, 1721, 1746, 1788 1809, 1824, 1836, 1851), the Edinburgh Pharmacopœia (1699, 1722, 1736, 1756, 1774, 1792, 1803, 1807, 1809, 1813, 1817, 1839, 1841), and the Dublin Pharmacopœia (1807, 1818, 1826, 1850)—possibly others, some, perhaps, reprints—together with additions made in the resulting conjoint pharmacopœia, or British pharmacopœia (1864, 1867, 1885, and addendum of 1890).

Now, my conception of a true British Pharmacopœia has always been what, for convenience of description and discussion, may be termed an *Imperial* British Pharmacopœia—as useful in the remotest corner of the Queen's dominions as in the center of London; a national medicine book of which, as of the empire, it might be said, but without boasting and as simply expressive of its silent, never-ending usefulness, "the sun never sets on its might." In 1886 that conception ripened. The present pharmacopœia had been published in the autumn of 1885, and one year after the editorial duties of myself and colleagues, Professors Redwood and Bentley, had ceased, I was requested by Pharmacopœia Committee of the Medical Council to advise the council as to any procedure that might be desirable to secure satisfactory future revisions. The reply to this request, dated November 1, 1886, was printed and circulated among the members of the council, and, it may be added, has been acted on in its entirety by the council It was two fold, and related (*a*) to the official recognition of pharmaceutical research; (*b*) to imperial extension. It is necessary to deal with the former of these two subjects before reverting to the latter.

The first (*a*) of the two suggestions whereby the due pharmaceutical efficiency of the next British Pharmacopœia might reasonably be expected to be promoted was that annually there should be prepared for and presented to the Pharmacopœia Committee of the Medical Council, a printed "Report on the Progress of Pharmacy in its Relation to the Future Revision of the British Pharmacopœia of 1885," that is to say, a report on any and every original research, or published experiment, or suggestion relating to any one of the thousand or so articles, or sections, or monographs, of the pharmacopœia—the number is now (1894) 1,003 if the articles of the appendix and the addendum be included—or on the arrangement or classification of the contents of the volume or on its nomenclature, systems of weights and measures, and so on; the report to include the reporters' own views, and his comments on suggested omissions, additions or alterations. The writer had the honor of being appointed the reporter, and his seven annual reports have been accepted and printed by the Medical Council from year to year. The first for 1886 covered rather more than one year, namely, from the date of publication of the pharmacopœia in September, 1885, to the end of December, 1886. The eighth, for 1893, will be presented at the approaching spring meeting of the council in May, 1894. The arrangement of the contents of the reports is alphabetical, like that of the pharmacopœia itself, hence future reference will be easy, especially if, as may be hoped, there should be added, in due time, a single general index to all the reports issued during the life of the present edition of the pharmacopœia. Each paragraph of each report has full reference to the volume and page of the weekly journal containing the original research, experiment, or suggestion. In many case subjects have not been reported at the year's end, but when the papers upon them or the correspondence respecting them have been more or less completed. A stock of these annual reports has been retained at the offices of Medical Council—sufficient in number for each member of future compiling committees, medical and pharmaceutical, to be supplied with an indexed, interleaved bound set but insufficient for any further distribution. A set so far is already in the library of the Pharmaceutical Society in London. A similar set as far as published is now presented to the library of the society in Edinburgh. By this "reporting" plan the labors of original workers will more readily be recognized and the duties of compilers *pro tanto* be facilitated.

* * *

To turn now to the discussion of the character of the next British Pharmacopœia in its home editorial aspects, a discussion which it is intended that this paper shall initiate; all views, it may be stated once more, of course, being subject absolutely to the controlling voice of the Medical Council and the Pharmacopœia Committee.

Clearly it would be unwise to alter the nomenclature of the present pharmacopœia in any important respect. In the recently issued pharmacopœia of the United States the Latin nomenclature of the previous edition is retained, while there is a half-and-half alteration of the English nomenclature.* For instance, *Magnesii Sulphas* and *Tinctura Opii* appear in that old dress which, let us hope they will long retain. While, however, under the leading title *Tinctura Opii* there appears the leading English title *Tincture of Opium*, which also is a translation, under the leading Latin title *Magnesii Sulphas*, there appears, not the translation of those words, namely, *Sulphate of Magnesium*, but, in a single line in type of Egyptian blackness, *Magnesium Sulphate*, and so on with the galenical and the chemical nomenclature. Here is a sacrifice of the advantages of translation and of literary elegance to mere "up-to-date" chemistry and its will-o'-the-wisp nomenclature. Scientific chemists claim the right to alter their views of the chemical constitution of matter as often as may be desirable; to substitute one crutch, or rather hatpeg, of hypothesis or theory for another whenever the advancing strides of their science may render such a course expedient; to change notation in accordance with their views wherever the conjoint wisdom of the followers of chemistry erects a guide post; and to give new consistent names to formulæ. But the pharmacist and the medical practitioner, and the writer as a professed if anxious guide of both, should place in the front rank of the qualifications for a name not supposed constitution, which is here to day and gone to-morrow, but permanence—a name which shall, if possible, be unambiguous, contain no numeral syllables, be recognized throughout the empire, and possess the very minimum of instability. Chemistry is unfortunately splitting off from pharmacy. Chemists have arisen other than chemists and druggists, and "chemists and druggists" are growing up who are not the former, or scientific "chemists," but "pharmacists" alone. Better, perhaps, accept what appears to be the inevitable and be content with the name "pharmacist," but therewith let us take as our motto, "Pharmacy for the Pharmacists." Pharmacists should have their own nomenclature, which while not inharmonious with the frequently-changing nomenclature of chemistry shall have the prime virtue of all possible permanence. Few British medical practitioners or pharmacists will sympathize with this recent action of the compilers of the otherwise highly improved Pharmacopœia of the United States. Let us trust that we shall retain in our next British Pharmacopœia both the Latin and English leading chemical names of the present edition as a rule, with perhaps no so-called indeclinable substantives.

The writer's views respecting official synonyms, more especially those which tend to remove difficulties and uncertainties respecting the composition of what may be termed household remedies, have been set forth in the pharmaceutical press, and so far have been strongly supported. The Pharmaceutical Pharmacopœia Committee may be trusted to give a practical outcome to the matter. The subject is wide in itself and in its bearings, but is, perhaps, fairly focussed in the Reports for 1887, 1888, 1889, and 1890.

Respecting official weights and measures pharmacists would much help by discussing the question of the substitution of grains by measure—that is "fluid grains" or "grain-measures" for minims. We use ounces (ozs.) and fluid ounces (fl. ozs.); why not grains (grs.) and fluid grains (fl. grs.), the minim gradually, in the course of years, dropping out of use? Viewed in the light of variation in doses, the subject has not apparently much therapeutical importance, and its legal bearings are not insuperable; but its pharmaceutical importance is considerable in its relation to the question of accuracy in compounding solutions and in dispensing, and as promoting simplicity of relationship of weights to measures. In the "Year Book of Pharmacy," 1889, p. 498, will be found a series of formulæ for official *liquores*, in which 1 part by weight of active principle is contained in 100 similar parts by measure—for example, 1 ounce of arsenic in 100 fluid ounces of solution, or 1 grain in 100 fluid grains. In the technical language of pharmacy these are true "1 per cent. solutions" because of the implied practice which never need be abandoned—namely, "solids by weight, liquids by measure." Where the words "one per cent." are not qualified by something expressed, something understood, or an implied practice then, of course, the words "one" and "per cent." must, by the ordinary laws of language and logic, apply to the same thing or condition and not to dissimilar things or conditions. A solution containing 1 grain in 100 minims is scarcely an equally techni-

* Condensed from a paper read at an evening meeting of the Pharmaceutical Society of Great Britain.

* See Professor Attfield's letter in the October 26 number of The American Druggist and Pharmaceutical Record.

cally true one per cent. solution and certainly not an equally *simple* technical one per cent. solution. An editor must not yet express a decided opinion on the question of the abolition of the minim.

But a still more important question relating to official weights and measures is the growing demands on our attention of the metric decimal system. This is now practically the sole system in the United States Pharmacopœia. Our colonists in Canada must largely use that pharmacopœia; and it may be expedient to give them official formulæ on the metric system. We must, of course, assume that the medical practitioners and pharmacists of the old country, at least, would not at present accept a pharmacopœia on the metric system alone. Cannot those monographs of our current pharmacopœia, which include weights and measures on the imperial system, be followed in every case by formulæ on the metric system? Sometimes it will only be necessary to repeat the lines containing the quantities, the directions applying to either system; sometimes the directions will admit of adaptation to either system; sometimes the paragraphs of directions in terms of the imperial system will also have to be repeated in terms of the metric system. The book need not be increased materially in size by such an extension of matter, for the "spacing," at least, might be less liberal than at present. It is not at present desirable further to enter on this question, for necessarily it must be fully discussed in the colonies and India, as well as at home.

Colonial and Indian *additions* to the pharmacopœia have been mentioned. Considering the activity exhibited in the search for and in the making public of new drugs during the past 20 years, additions of many really new drugs cannot be expected. The question of home additions is important for medical consideration, but is one on which pharmacists may be able to supply some information to medical authorities in regard to the frequency or infrequency with which the more firmly established "new remedies" are prescribed. Here attention may be drawn to the following paragraph in the preface of the new pharmacopœia of the United States: "In accordance with the positive instructions of the convention those of the new synthetic remedies which cannot be produced otherwise than under patented processes, or which are protected by proprietary rights, were not admitted into the pharmacopœia."

The younger workers at original pharmaceutical investigation will not accuse the writer of merging editor in professor, nor the older of merging editor in reporter, if he ventures to beg them to continue to experiment—experiment—experiment. There is dignity as well as definiteness in the words "pharmaceutical research;" and it is on accurate pharmaceutical research, properly so called, from a simple observation to an elaborate investigation, far more than on strictly chemical, physical, or botanical research, that the position which pharmacists have won for themselves in the production of the pharmaceutical portion of our pharmacopœia can be maintained; it is on published accurate pharmaceutical research, in the main, that the pharmaceutical basis of future Imperial British pharmacopœias can be constructed satisfactorily.

COD-LIVER OIL WITH SACCHARIN.

[*Wiener Klinische Rundschau.*]

Saccharin	40 cgm.
Acetic ether	2 Gm.
Cod-liver oil	100 Gm.
Peppermint or cinnamon oil	q. s.

PRACTICAL PHARMACY.

The following notes on incompatibilities are selected from a series of papers read before the Edinburgh Chemists', Assistants', and Apprentices' Association on January 31, 1894.

Citrine Ointment and Liniment of Lime.

By W. F. Martin.

The author had recently dispensed an ointment consisting of equal parts of citrine ointment and liniment of lime. In twenty-four hours the ointment was distinctly darkened in color. With some ointments the change took place very rapidly. The object was to find out the cause of this blackening. It was thought it might be due to the presence of mercurous salt in the ointment and precipitation of mercurous oxide by the calcium hydrate. The solution of mercury in nitric acid for the ointment was made in strict accordance with the official directions, and on being tested there was no evidence of mercurous salt. With this the ointment was made very carefully as officially directed. The product, when tested, indicated a small proportion of mercurous salt, showing that reduction had taken place. It was found that olive oil did not reduce the mercuric salt, but lard, both in the fresh and rancid state, did so distinctly. The finest lard was employed. Although there is excess of olive oil in the liniment of lime, complete saponification does seem to take place, and there is a small quantity of free calcium hydrate present. The blackening of the ointment is therefore due to the precipitation of black mercurous oxide by the free calcium hydrate.

Calomel and Potassium Bromide.

A DANGEROUS INCOMPATIBILITY.

By L. N. Thompson.

The paper dealt with the following prescription, which has been written for a child:

Potass bromidi	grs. x
Calomel	grs. iii
Ft. pulv. mitte tales xii.	

As soon as the ingredients are rubbed together in a mortar the mixture begins to darken, and if water is added the powder instantly becomes grayish black. It was found that if the potassium bromide was powdered and then dried so as to remove interstitial moisture before being mixed with the calomel, there was no darkening, but the same change took place instantly on the addition of moisture. It was thought that the presence of carbonate or free alkali in the bromide might cause formation of black mercurous oxide, but on testing with phenolphthalein and litmus it was found that the salt was quite neutral. After adding water to a quantity of the mixed powders it was sublimed, and the sublimate contained distinct globules of metallic mercury. The mixed powders were shaken up with water and filtered. On acidifying the filtrate and warming with copper foil metallic mercury was deposited, indicating a soluble salt of mercury. On shaking up with ether and evaporating the ether, mercury was found in the residue indicating a mercuric salt. On adding solution of strychnine hydrochlorate to the aqueous solution a dense white precipitate separated, indicating the double salt, $HgBr_2 2KBr$, analogous to Mayer's reagent, $HgI_2 2KI$. The darkening is therefore due to the separation of metallic mercury from the calomel, and is explained by the following equation:

$$2HgCl + 4KBr = (HgBr_2 2KBr) + Hg + 2KCl.$$

The prescription therefore is an example of a dangerous incompatibility, as the mercuric salt formed is a powerful poison. There is no method by which the decomposition can be avoided, and calomel and potassium bromide should never be prescribed together.

Calomel and Tincture of Iodine.

By L. N. Thompson.

The following prescription was the subject of inquiry:

Tinct. iodi	℥i
Calomel	grs. xx

This curious prescription had been ordered and directed to be painted on a glandular swelling on the neck. What the prescriber desired seemed difficult to understand. On adding the calomel to the tincture of iodine the latter was nearly decolorized, and the calomel became of a bright red color. The decomposition was investigated and explained as follows. The calomel and potassium iodide react thus:

$$2HgCl + 4KI = HgI_2 2KI + Hg + KCl.$$

The free mercury was seen to separate and change to green iodide, and ultimately red iodide. One fluid ounce of tincture contains eleven grains potassium iodide, and this reaction therefore uses up 7.8 grains of the calomel, leaving 12.2 grains to react with the free iodine, thus:

$$2HgCl + I_2 = HgCl_2 + HgI_2.$$

One fluid ounce of tincture contains eleven grains of iodine. 12.2 grains calomel contain 0.4 grains of mercury. One-half is 5.2, and requires 6.6 grains iodine to form HgI_2, leaving 4.4 grains of iodine still free.

In the first reaction 3.3 grains of mercury are set free. This requires 4.2 grains of iodine produce to form HgI_2 leaving 0.2 grains iodine still free. When the reaction was completed the free iodine was determined volumetrically with the result that one fluid ounce contained 0.24 grain, thus confirming the above explanation. The bottle then contained a solution of mercuric chloride and mercuric iodide with a little free iodine and a precipitate of mercuric iodide. It has been found that on standing a further decoloration ensued, and probably the following equation explained how this came about:

$$HgCl_2 + I_2 = HgICl + ICl.$$

On adding iodine to solution of mercuric chloride a yellow precipitate formed and gradually changed into a crystalline red precipitate. There was no evidence of free chlorine, and the above equation showing the formation of iodochloride of mercury known to occur in yellow rhombic crystals which change to tetragonal red crystals, and monochloride of iodine, may explain the further decoloration, but this was not proved. He had been assisted and guided by Mr. Hill in carrying out the experimental work for this paper and the previous one.

A New Salol Reaction.—To a small quantity of salol contained in a porcelain dish add concentrated sulphuric acid. It will turn yellow, brown and finally green. Now add water and stir and the mixture will turn red, but will again become greenish if ammonia is added. When resorcin is so treated a dark blue color first appears which on addition of water turns red, to again become blue on the addition of water.

Observations on Some British Pharmacopœial Preparations.

By E. W. Lucas, Ph.G.

The following suggestions for additional tests and descriptions, which the author is of opinion might be usefully included in the next British Pharmacopœia, were communicated to the Pharmaceutical Society of Great Britain at an evening meeting on Wednesday, February 14.

Aloes.—No chemical test is official for distinguishing between the two varieties of aloes. Cold nitric acid produces a fugitive red color when added to powdered Barbados aloes, while Socotrine aloes, when so treated, gives no coloration until warmed, when it turns reddish brown. Also—it might be added—the surface of hepatic aloes is invariably covered with minute wrinkles, and the odor of either variety becomes much more marked if gently breathed upon.

Balsam of Tolu is occasionally mixed with common turpentine, but its presence may be readily demostrated if, after adding strong sulphuric acid to the suspected sample, sulphur dioxide is given off, accompanied by blackening—whereas pure balsam only turns cherry red.

Buchu.—Although it is mentioned that buchu leaves are marked on their margins with oil glands, yet stress might be laid on the fact that one gland is situated on each serrature, and especially one at the apex. *Empleurum serrulatum*, which somewhat resembles *Barosma serratifolia*, has no gland at the actual apex.

Catechu and Scammony.—The percentage of ash yielded by these substances is not specified. Catechu is required to be entirely soluble in boiling water. This it rarely, if ever, is, a more or less turbid mixture being generally produced. Some impurity is invariably present, and it would be well to limit the ash to 6 per cent., as is now done by the German Pharmacopœia. Scammony is notoriously adulterated; even the prefix "virgin" is not always a guaranty of its purity, and the limit of ash would be an additional safeguard, 3 per cent. being looked upon as the maximum.

Poppy Capsules.—When poppy capsules are used for extract and for syrup they are directed to be freed from the seeds. Should not this direction be extended to the decoction? As it stands the capsules are ordered to be bruised, which implies that the seeds are to be used as well. It is, I know, urged by some that a little of the oil is removed from the seeds and remains suspended in the mucilaginous liquid. This may be so to a small extent, but I think it must be a very small one, and it seems doubtful if any special therapeutic value can be accredited to it. Moreover, poppy capsules are so often broken in storage and transit that most of the seeds escape, and frequently the decoction is prepared with anything but the fair percentage that belong to a capsule.

Digitalis.—Everyone knows the difficulty experienced at times in distinguishing broken specimens of dried leaves. Digitalis, for instance, is common in certain parts of the country, and many pharmacists no doubt have the leaves collected and dried under their own supervision. This is as it should be, but unfortunately it cannot always be done; and then one has to fall back on dried material, obtained as a rule in a more or less broken and crumpled condition. Under such circumstances, a detailed acquaintance with the leaf is desirable, and it might usefully be noted that in foxglove leaves the veins run well down into the petiole, thus distinguishing them at once from numerous possible substitutes, including the not uncommon one of *Inula Conyza*.

Plasters.—In several of the official plasters curd soap has been substituted for hard soap, and I have to strongly advocate a return to the latter. According to Dr. Paul, powdered curd soap contains from twice to three times as much water as most other soaps, and whether it is due to this fact or not, certain plasters made with it are not as easy to roll into sticks as they were formerly. Emplastrum plumbi and emplastrum resinæ are notable examples of this alteration for the worse. I also have to suggest the addition of a little rubber to the principal bases, to counteract the tendency to crack when kept spread. A process involving little trouble is to dissolve the rubber in chloroform and anhydrous wool-fat, in a wide-mouthed bottle, fitted with a long upright condenser, applying just sufficient heat to keep the mixture gently boiling; one part of rubber and two parts of wool-fat are good proportions. The semi-fluid mixture should not be added to the other ingredients until nearly cool, when if well stirred, the chloroform is soon dissipated. A little extra care has perhaps to be taken in the manipulation, as if a heat much exceeding 200° F. is used to melt the plaster, the rubber has a slight tendency to come out in lumps. This, however, is no disadvantage, as every practical plaster spreader is much too wise to use a greater heat than that afforded by a water-bath. I have here emplastrum ferri and emplastrum picis, to which only half per cent. rubber and one of wool-fat were added, and yet they are at this length of time still sufficiently pliable to admit of being rolled up and sent out in a cylindrical case without cracking, an operation to which few, if any, pharmacopœial plasters would submit to half an hour after solidification had taken place. Rubber is now so extensively employed by large plaster spreaders that no serious objection is likely to be lodged against its introduction, particularly as the quantity would be so small.

Extracts.—The solid extracts are mostly ordered to be evaporated to a suitable consistence for forming pills, or else to the consistence of a soft extract. This leaves a good deal to the discretion of the operator. If an extract is to be really of a consistence for pill making it must be hard indeed; as a fact very few extracts could be made into pills without the aid of some addition, and they are very rarely so prescribed. Would it not be better to order all the solid extracts to be evaporated to a soft consistence, say that of fresh honey, for it is obvious that both requirements cannot be complied with. With regard to those intended for pill making, it has been my own experience that the official ones are better evaporated fairly low down, and while still warm sufficient finely sifted althea or sugar of milk stirred in, to bring the whole up to pillular consistence when cold. An ordinary extract requires about 10 per cent. of moisture to be driven off, and replaced with an equivalent quantity of some inert powder to effect this. There are however three—the extracts of colocynth, rhubarb, and cascara—which even if treated as described are a constant source of trouble to the dispenser. These, it is suggested, should be evaporated at a proper temperature to dryness, and either be brought up to weight or kept as "species," the equivalent of which is to be used instead of the soft extract.

Extract of Nux Vomica and Opium.—These are both adjusted to definite strengths, the finished product varying considerably in consistence, which alters still further on prolonged keeping. This renders the standardizing abortive, and it is suggested that these two also should be evaporated to complete dryness, and adjusted with sugar of milk.

Extractum Belæ Liquidum already contains about 20 per cent. of rectified spirit, but it is insufficient to prevent the tendency to decomposition during very warm weather. In hot climates it is a common practice to add a little chloroform or salicylic acid to preparations whose keeping properties are not of the best, but I doubt if such a procedure is admissible in England, although on some of our summer days the thermometer may register an almost tropical temperature.

Extractum Cinchonæ Liquidum.—Our present process for this liquid extract is undoubtedly a vast improvement over the old method of exhaustion with distilled water, but even now the alkaloids are only partially removed, and serious loss, with consequent increase in the cost of production, is the result. After several trials I have found that the best results are obtained by percolating at an elevated temperature. The apparatus employed is simply an ordinary percolator provided with a hot water jacket, and can easily be fitted up in any laboratory. The coarsely powdered drug is moistened and packed in the percolator, the hot menstruum being poured on until the liquid begins to drop, when the orifice is closed and the whole allowed to macerate at a temperature of about 150° F. for twenty-four hours, when percolation is allowed to proceed (still maintaining the temperature) until solution of soda ceases to cause a precipitate with the droppings. The percolate is afterward evaporated on a water bath and standardized in the usual way. Working on small quantities I have found that each pound of bark requires about four pounds of the B. P. menstruum for exhaustion, although operating on a large scale this quantity could probably be reduced. The comparative value of the two processes will be seen by the following: Two pounds of powdered red cinchona bark, practically containing five per cent. of total alkaloids, was divided into two equal portions. One half was exhausted by hot percolation, the second by the B.P. process. In the first instance the standardized product was as nearly as possible sixteen ounces, in the second only a little over thirteen ounces, although it had been percolated by the full amount of liquid ordered, followed by an additional four or five pints of water. These facts appear to indicate a temperature of about 150° F. as the most suitable for complete extraction, with a reduction in the volume of menstruum and consequent shortening in the time of evaporation and exposure.

Liquorice Root (Dried).— This may be used in either the peeled or unpeeled condition. Would it not be well to insist on its being peeled, as if the cortical portion which contains an acrid principle is included, the sweetness is somewhat impaired?

Rhamnus Frangula bark is ordered to be kept for at least one year before being used. Should not this direction be extended to cascara sagrada? It has been stated that extract made from seasoned bark is not only less bitter, but is less liable to disagree with the patient.

Glycerin of Starch was, I believe, introduced by Mr. Schacht some thirty years ago under the the name of "Plasma." His original formula, which was practically adopted by the 1867 pharmacopœia, produced a fairly stiff translucent jelly, but now that one-third of water is sub-

stituted for an equal volume of glycerin, the product is too soft to answer the same purposes the old one was fitted for; moreover it has a great tendency to separate after being kept a short time. If made with glycerin alone the plasma does absorb moisture from the atmosphere, and a little water may be an advantage, but 33 per cent. appears far too much.

Guaiacum Resin is occasionally adulterated with pine resin. This sophistication may, however, be detected, if a terebinthinate odor is exhaled when thrown on burning coals, or if the precipitate caused by the addition of caustic potash solution to the tincture remains undissolved in excess of the alkali.

Infusions.—Bruised leaves are ordered to be used in making infusion of buchu, and the rhizome in No. 20 powder for infusion of serpentary. In the case of the first-named a mucilaginous liquid is produced, the viscosity of which at times may be so magnified as to render straining almost an impossibility; while the infusion when so made is much more liable to suffer rapid decomposition. In the case of the second, if serpentary infusion is made with bruised material, the hot water takes up an appreciable amount of starchy matter, the result being that if prescribed with tincture of iodine, as it frequently is, a turbid blue mixture is produced, owing to the fixation of the iodine, which is hardly what the prescriber intends. Under these circumstances it would appear advantageous to omit the directions for bruising either drug when ordered to be infused with boiling water.

Rhubarb in powder may be adulterated with turmeric, and it would be useful if a test were inserted for its detection. Perhaps as good a one as any is to add a little saturated solution of boric acid to a weak tincture of the suspected powder, when a brown coloration ensues if turmeric is present.

Sodium Arseniate contains more than half its weight of water of crystallization, part of which may be lost if the salt is exposed, the effloresced salt then containing a varying proportion of water. The anhydrous salt on the other hand is stable and easy to store and weigh, and it would be a distinct gain if it could be substituted for that now official.

Syrup of Phosphate of Iron is peculiarly liable to change, and in spite of many attempts no form has yet been devised yielding an unalterable preparation. In the official process sulphate of iron and phosphate of sodium react on each other, forming ferrous phosphate and sulphate of sodium, the resulting free sulphuric acid, which would keep a portion of the iron in solution, being nearly neutralized with bicarbonate of soda. After washing, the precipitate is dissolved in phosphoric acid, and this solution converted into syrup, which is therefore presumed to contain acid ferrous phosphate. But during the washing the original white precipitate has turned blue from the formation of ferroso-ferric phosphate, and this oxidation continues to some extent in the syrup, notwithstanding the protective action of the sugar, thus probably accounting for the change in color on exposure. Under such circumstances it would appear advantageous to direct a solution to be made directly from iron wire and phosphoric acid, in such proportions that, when mixed with simple syrup, one grain of phosphate should be contained in each fluid drachm. This is by no means a new idea, as it has been recommended by several very eminent pharmacists for a considerable length of time, and no doubt many chemists already manufacture their syrup thus; still it would be better if authority were given for doing this.

Tinctura Quininæ Ammoniata, although so useful is perhaps the nastiest medicine in the whole pharmacopœia, combining as it does a sharp alkalinity with such intense bitterness. I wish to show you a specimen containing the full amount of quinine sulphate and solution of ammonia, partially disguised by the addition of glycerin and compound tincture of chloroform. I cannot claim that its admixture with water is any more elegant than that now official, but I think it would be much more readily taken by the fastidious. A fluid drachm forms only a slightly opalescent mixture with a wineglass of water. The suggested form is:

Quinine sulphate	grs. 160
Diluted alcohol	oz. 6
Comp. tinct. of chloroform	oz. 2½
Solution of ammonia	oz. 2½
Glycerin, to produce	oz. 20

Mix the quinine with the diluted alcohol, and add the tincture and ammonia, previously mixed together; shake and make up with glycerin to one pint. In this, as in the official form, there are nearly 8 minims of ammonia solution in each drachm. This appears somewhat large, and the mixture would be rendered much more palatable if the quantity were reduced to an ounce and a half.

Effervescing Preparations.—The proportions of the two acids in the effervescing preparations in the addendum require a little adjusting to secure strongly cohering granules. As now prepared, they are very apt to crumble to powder during the sifting, or even before such an advanced stage is reached. In effervescent sulphate of magnesia the citric acid should be increased to 6½ ounces, with a consequent reduction of ½ oz. of the sugar. In effervescent phosphate of soda the amounts of the acids would be better if more nearly equalized, thus:

Powdered tartaric acid	12 ozs.
Powdered citric acid	10½ ozs.

Mucilages and Injections.—In the three mucilages, and one of the hypodermic injections, distilled water is employed, the exceptions being made with camphor water, and they are all more or less prone to change if kept any length of time, even protection from light being insufficient to obviate this. Perhaps it is impossible altogether to prevent decomposition, but a vehicle might be used, possessed of such preservative power that solutions made with it would keep unimpaired for a reasonable period. Water that has been boiled with the residue left after manufacturing syrup of tolu has one of the strongest claims in this respect, and could with advantage be employed in many pharmaceutical operations. Injections of ergotin and apomorphine hydrochlorate both keep well when made with it; while morphine injection not only does not turn brown so rapidly, but is less liable to deposit crystals of alkaloids. Mucilage of tragacanth already keeps fairly well, but the mucilages of starch and acacia are noted for their tendency to spoil. Specimens of these preparations with tolu water a month or more old, which have been kept at varying temperatures, are here, and I think they are all in a very fair state of preservation. There is perhaps one little drawback if mucilage of acacia is made with this water, and that is, the color is slightly deepened, but it is not too serious to prevent its adoption

Pills.—In our present formulæ for pills it appears as if we are trying to combine two practically incompatible conditions, viz., a soft mass which will mix easily with other ingredients, and a pill mass of sufficient consistence to roll, which when rolled and cut ought to yield pills that will keep their shape. Three masses alone answer these conditions; most of the others are much too soft when first made, and much too hard if kept for any length of time, and the ones that do not come under either category are of such consistence as to adapt themselves with singular exactitude to the shape of the containing vessel. Such pill masses as those of aloes and iron, or aloes and asafœtida if kept for a short time, become almost as hard as the mortar in which they were compounded, while others, as Plummer's pill, are just as unsatisfactory from never really hardening or drying at all. It would be a decided advantage, and a change that would be welcomed by most dispensers, if the official pills, with certain exceptions, were kept in powdered "species," say four grains to equal five grains of mass, the excipient being left to the discretion of the prescriber or dispenser. The exceptions of the pills of iron, iodide of iron, mercury, and phosphorus, none of which would lend themselves to such alteration if it were desirable I may perhaps be allowed to suggest the omission in the next edition of the synonym for pil. saponis co., for if one is to judge by recent correspondence that has appeared in our journals, considerable doubt may be engendered in the mind of the dispenser as to what is meant when pil opii is ordered in a prescription.

Ointments.—When unguentum cetacei is made without the benzoin it will not keep for more than a week or two under ordinary circumstances. If benzoated it is not entirely satisfactory, for this reason that there are certain persons who cannot apply benzoic acid to the skin without its causing more or less irritation. This may be due to idiosyncrasy, but nevertheless it is the case, and only on the morning before I wrote this a case came under my notice in which much pain and smarting had been experienced after its application to the eyelids. Here it is proposed to make use of oil of theobroma. The following proportions yield an ointment almost indistinguishable from the official one, and probably much blander in operation, while the preservative properties of cacao butter are almost as marked as those attributed to benzoin:

Spermaceti	4
White wax	2
Almond oil	18
Oil of theobroma	6

Filtration Methods.—Anyone who has had to manufacture simple elixir and such like preparations knows the difficulty there is in obtaining perfectly bright solutions of the essential oil in water. The use of calcium phosphate, as suggested by the U. S. Pharmacopœia, partially gets over the difficulty, but if acid liquids are under operation an inert powder must be substituted. Recourse must then be had to kaolin, as directed by the B. P. C. Formulary. But a new difficulty arises from the extremely fine state of division in which kaolin exists: in suspension it can only be removed by filtering through a layer of itself and the constant turning back of the filtrate to secure this involves a great deal of time and trouble. To obviate these disadvantages I have to propose the use of a mixture of powdered paper, asbestos, and kaolin, in some such proportions as the following:

Paper powder (obtained by rubbing dried white filter paper through a 20-hole sieve)	1 oz.
Asbestos (sifted)	1 oz.
Kaolin	10 ozs.

Mix lightly together, finally sifting. The powder should be shaken up with the

turbid liquid for a few minutes and poured on to the previously wetted filter, the filtrate being returned until it passes through bright, which it does in a short time. Using this admixture, the filtering of such refractory liquids as acid glycerole of pepsin is rendered effectual and expeditious, while turbid solutions of essential oils in distilled water, etc., are very readily dealt with.

Ancient Egyptian Pigments.*

The red pigment used by the Egyptians from the earliest times is a native oxide of iron a hæmatite. Most of the large pieces found by Mr. Petrie are an oölitic hæmatite. One specimen, on analysis, gave 79.11 per cent. and another 81.34 per cent. of ferric oxide. The pieces to be used as pigments were no doubt carefully selected, and the samples that I have examined, mostly from Gurob and Kahun, are very good in color. All the large pieces were of a singular shape, having one side smooth and curved; and in all cases this side was strongly grooved with striæ, giving somewhat the appearance to the mass of its having been melted, and allowed to cool in a circular vessel. No doubt the explanation of this smooth-curved surface is that these pieces had actually been in part used to furnish pigments, and, having been rubbed with a little water in a large circular vessel, had been ground to this shape. By experiment it was found that these pieces of the native hæmatite yielded, without any further addition by way of medium, a paint which could readily be applied with a brush, as it possesses remarkable adhesive properties, and it resembles exactly, in every particular, the red used in the different kinds of Egyptian paintings.

In addition to these samples of the pigments, all of which are native minerals and in their natural conditions, there are other reds, finer in color and smoother in texture, evidently a superior pigment; these apparently have been made from carefully selected pieces of hæmatite, which have been ground and washed, and dried by exposure to the air. Some of these pieces are very fine in color, and it would be difficult to match them with any native oxide of iron that is used as a pigment at the present day. There is every reason to believe that this is the earliest red pigment which was used, and it remains to this day the commonest and most important one; it is a body unattacked by acids, unchangeable by heat, and even moisture and sunlight are unable to alter its color. At the present time many artificial products are used to take the place of this natural pigment.

Yellow Pigments.—These, again, are natural products, and by far the most common yellow used by the Egyptians is a native ocher. These ochers consist of about one-quarter of their weight of oxide of iron, from 7 to 10 per cent. of water, and the rest of their substance is clay. When moist they have a greasy feel, and work smoothly and well with the brush. There is no evidence of these bodies having changed color, but undoubtedly they are chemically not nearly so stable as the red form of oxide of iron. Many of the pieces of this pigment, found at Gurob and at Tel-el-Armarna, are very fine in color.

Some of the specimens of the very earliest colors of which the exact history is known appear to be an artificial mixture of these two colors, the red and yellow, thus producing an orange color. These samples were found on a tomb at Medum, which, according to Prof. Flinders Petrie, was built by Nefermat, a high official and remarkable man at the court of Senefru. Senefru is known to have lived in the fourth dynasty, about 4,000 B.C., and to have preceded Khufu, the Cheops of the Greeks, who was the great pyramid builder. Now, on Nefermat's tomb the characters and figures are incised and filled in with colored pastes, which I have been able to examine, and it is of interest to know that this use of colors was a special device of Nefermat, for on his tomb is stated that: "He made this to his god-*in his unspoilable* writing." In this unspoilable writing the figures are all cares fully undercut, so that the colored pastes so long as they held together, should not be able to drop out. All the pastes used are dull in color, consisting entirely of natural minerals. Hæmatite, ochre, malachite, carbon, and plaster of Paris appear to be the materials used. Chessylite, as a blue, probably was known even at that date, but the artificial blues seem hardly at this period to have come into use; certainly they are not found in the specimens of the Nefermat colors which I have examined. Another yellow pigment, far brighter in color, was also often used. It is a sulphide of arsenic, orpiment; it is a bright and powerful yellow, again a body found in nature, but a much rarer body than ochre, and consequently, probably was only used for special purposes, when a brilliant yellow was required. As far as it is known at present, this pigment did not come into use until the eighteenth dynasty. Gold might even be placed among the yellow pigments, for it was largely used, and with wonderfully good effect. Its great tenacity seems to have been fully recognized, for gold is found in very thin sheets, and laid on a yellow ground, exactly as is done at the present day.

These pigments are then simply natural minerals, no doubt carefully selected, and sometimes ground and washed previous to being used; but the blue color which is so largely used by the Egyptians is an artificial pigment, and consequently has far more interest attached to it than those already mentioned. It is a body requiring considerable care and experience to make, and thus its manufacture enables us to some extent to judge of the knowledge and ability which its producers had of carrying on a chemical manufacture. No doubt the splendid blue of the mineral chessylite was first used, but certainly in the twelfth dynasty—that is, about 2,500 B.C.—these artificial blues were used. They are all an imperfect glass, a frit, made by heating together silica, lime, alkali, and copper ore.*

The number of failures which may have occurred, and how much material may have been spoilt, cannot be known, but all the blue frit which I have examined—and it is a considerable amount, some being raw material, lumps as they came from the furnace, and the rest ground pigment—all has been, though differing in grain and quality, well and perfectly made. Now this implies that the materials have been carefully selected, prepared, and mixed, and that definite quantities of each were taken, this necessitating the carefully measuring or weighing of each constituent. An early application of the fundamental law of chemistry, combination in definite proportion. The amount of copper ore added determined the color; with 2 to 5 per cent. they obtained a light and delicate blue; with 25 to 30 per cent. a dark and rather purple blue; with still more the product would be black; if the alkali was too little in amount, a non coherent sand resulted; if too much a hard, stony mass is formed, quite unsuitable for a pigment. The difficulties, however, did not by any means end with the mixture of the materials. For the next process, the heating, is a delicate operation. Unfortunately up to the present time the exact form of furnace in which this operation was carried on is not known. The furnaces were probably, especially after use, very fragile structures, and have passed away.

Considerable experience in imitating these frits even when using modern furnaces has taught me that the operation is really a very delicate one; the heat has to be carefully regulated and continued for a considerable length of time, a time varying with the nature of the frit being prepared; and, further, in the rough furnaces used it must have been specially difficult to have prevented unburnt gases from coming in contact with the material; but if they did, a blackening of the frit must have taken place. However, all these difficulties were avoided, and a frit was made which exactly answered all the necessary requirements. It had, for instance, the right degree of cohesion, for many of the large pieces which have been found have, like the hæmatite, a smooth, curved striated surface, and on rubbing in a curved vessel with water, easily grind to powder. The powder is naturally much less adhesive than the hæmatite powder, but on adding a little medium, it could at once be used, without other preparation, as a paint. Some of the pieces vary in color in different parts. This may have arisen from imperfect mixing, or from some parts of the furnace being hotter than others. It hardly appears to be intentional, possibly some of the dark, purplish-colored frits were produced by accident; large pieces of it have as yet, I believe, not been found.

By means of comparatively small alterations these frits could be obtained of a green color. One way was by introducing iron. If, for instance, the silica used was a reddish colored sand, it gave a greenish tinge to the frit; and frit made with some of the ordinary yellowish desert sand was found to give a frit undistinguishable from the most common of the old Egyptian frits. Again, a rather strong green color is obtained by stopping the heating process at an early stage, this green frit simply on heating for a longer time becoming blue. Another way in which even the strong colored blue frits have been converted into apparently green pigments is by their being coated over with a transparent but yellowish colored varnish which has to a remarkable extent retained its transparency, but no doubt become with age more yellow, and although strongly green now, may very likely originally have been nearly colorless and consequently the frit was then seen in its original blue color.

Even as early as the twelfth dynasty the green frits used were dull in color, and if by chance a brighter green was required then they used the mineral malachite. No doubt by far the most brilliant blue used at any time was selected and powdered chessylite, and even down to the twenty-first dynasty they seem to have

* A lecture delivered at the Royal Institution of Great Britain, by Dr. William J. Russell, F.R.S.

* A sample of the pale-blue frit gave, on analysis, the follow results:

Silica	88.65
Soda	0.81
Copper oxide	2.09
Lime	7.88
Iron oxide, alumina, etc.	0.57
	100.00

made use generally of somewhat colored frits; but after that time more subdued colors appear to have been used, and even the scarabs were made of a much duller color than formerly. All these blue frits form a perfectly unfadeable and unchangeable pigment. Neither the sun nor acids are able to destroy or alter their color.

The only other pigment to which I can refer this evening is the pink color, which, in different shades, was much used. This is again an artificial pigment, and belongs to an entirely different class from any of the foregoing ones, for it is one of vegetable origin

On simply heating it fumes are given off and the color is destroyed, but a large white residue remains; this is sulphate of lime.

It may here be stated that the white pigments used sometimes were carbonate of lime, but more generally sulphate of lime in form of gypsum, alabaster, etc. This substance is often very white in color, is very slightly soluble in water, and has a singular smoothness of texture, which makes it work well under the brush; and in addition to these qualities it is a neutral and very stable compound, so is well fitted for the purpose to which it was applied. It was easily obtained, being found native in many parts of Egypt. It is also interesting to note that there is an efflorescence consisting of this substance which frequently occurs in Egypt, and is of a remarkably pure white color; probably this was used as a superior white pigment. It was easy to prove then that the pink color was gypsum stained with organic coloring matter, and to try and imitate the color appeared to be the most likely way of identifying it.

Naturally, madder, which it is known has from the earliest times been used as a dye, was the vegetable coloring substance first tried, and it answered perfectly, giving under very simple treatment the exact shade of color to the sulphate of lime which the Egyptian pigment had. Essentially the same coloring matter may have been obtained from another source, viz., Munjeet. In the case of madder it is interesting to note that the color is not manifest in the plant — the Rubia tinctorum — for it is obtained from the root, and is even not ready formed there. In the root it exists as a glucoside, and this has to be decomposed before the color becomes manifest. In this root there exist several coloring matters, which are known as madder-red, madder-purple, madder-orange and madder-yellow. On breaking up the roots and steeping them in water for some length of time the colors come out, some sooner than others, so that the tints vary. Again, changes of color are easily obtained by the addition of very small quantities of iron, lime, alumina, etc., so that in these different ways a considerable range of colors could be obtained, but a delicate pink color was the one probably generally made. This color is easily obtained by simply stirring up sulphate of lime in a tolerably strong solution of madder, and adding a little lime, taking care to keep the coloring matter in excess; the coloring matter adheres firmly to the lime salt, and this settles onto the bottom of the vessel; the liquid is then poured off and the solid matter, if necessary, dried, or mixed—probably with a little gum, and used at once without other preparation. That the coloring matter was really madder could also be tested by another method, viz., by means of spectrum analysis. Both the madder red alazarin and the madder-purple purpurin give, when the light which they transmit is analyzed by the prism, very characteristic absorption bands; the purpurin bands are the ones most easily seen, consequently it became a point of considerable interest to ascertain whether from a specimen of this pigment, some thousands of years old, these absorption bands could be obtained. A small sample of this pink pigment was taken from a cartonage which was exhibited, and by treating it with a solution of alum the color was thus transferred to the liquid, and by throwing the absorption spectrum which it gave on the screen, and comparing it with the spectrum from a madder solution, it was clearly seen to be identical.

Many specimens in imitation of different colored frits, and a large copy of a cartonage colored with pigments prepared by the lecturer, were exhibited.

Ink Formulas.

In response to requests from several subscribers we reprint the following series of formulas for inks. The formulas have been declared by experts to be among the best ever published, having been devised by Eugen Deiterich, who incorporated them in his "Neues Pharmaceutisches Manual," edition of 1887. The later edition of this admirable work contains a number of new formulas which provide for the use of chemical salts not hitherto employed for the production of writing fluids.

1. INK BODY A.

Macerate 200 parts of coarsely powdered Chinese galls for 24 hours with 750 parts of distilled water, strain and express. Upon the residue pour 350 parts of boiling distilled water and express after one hour. Triturate 5 parts of white bole with the mixed strained liquids, raise once to boiling, removing the scum, and then filter through flannel-bags. Wash the latter with water, until the total weight of the filtrate is 1,000 parts.

2. INK-BODY B.

Three hundred parts of coarsely powdered Chinese galls, and 100 parts of fustic in coarse powder are extracted, as in the preceding case, with 750 parts of cold and 350 parts of boiling distilled water, the united strained liquids clarified with five parts of white bole, and the weight of the final filtrate made up to 1,000 parts.

In place of the extract of galls, tannin may be used; but in this case, as the other constituents of the extract are absent, it is necessary to add more of the salts, so as to increase the body of the ink. Inks made with tannin require more time to get black.

3. SOLUTION OF INDIGOSULPHATE OF SODIUM.

Introduce 150 parts of fuming sulphuric acid into a flask placed in cold water, and gradually add, avoiding increase of temperature, 20 parts of powdered indigo, previously dried at 212° F. Cork the flask and set it aside for eight days at the ordinary indoor temperature. Meanwhile prepare a filtered solution of 205 parts of carbonate of sodium and 430 parts of distilled water; add this in small quantities, at the end of eight days, avoiding loss by effervescence; warm gently to remove retained carbonic acid, and finally add water to make the total weight 800 parts.

4. SOLUTION OF CRUDE ACETATE OF IRON.

Macerate 10 parts of iron turnings with 100 parts of wood vinegar as long as any gas is given off; then digest two or three hours at a temperature not exceeding 122° F., filter, and adjust the filtrate to the sp. gr. 1.115.

ALIZARIN INK.

(Also Copying Ink.)

a. Dissolve 50 parts of green sulphate of iron in 750 parts of ink body B (cold), and then add the following ingredients in the order named: distilled water 100, solution of indigosulphate of sodium 150, solution of acetate of iron 25, chloride of ammonium 20, sulphate of sodium 20, sugar parts.

b. Mix tannin 50, green sulphate of iron 40, chloride of sodium 25, sugar 25, bisulphate of potassium 7.5, benzoic acid 2, dry indigocarmine 3, and picric acid 0.5 parts, with 1,000 parts of boiling water.

Either of these inks is decanted into a bottle which must be well stoppered. After a fortnight the clear ink may be drawn off from the sediment.

These inks will retain their copying quality for a period not exceeding twenty-four hours. Fresh writing furnishes brilliant copies.

BLUE NUTGALL OFFICE INK.

Ultramarine Ink.

a. Mix 500 parts of ink body A with a cold mixture prepared from: distilled water 300 parts, green sulphate of iron 30 parts, sugar 20 parts, hydrochloric acid 2 parts. Also dissolve, with a gentle heat, 2 parts of water-soluble aniline blue in 200 parts of distilled water, and add this when cold to the mixture first prepared

b. Dissolve 40 parts of tannin, 30 of sulphate iron, 32 of sugar and 2 of hydrochloric acid in 900 parts of distilled water, and add it to a solution of two parts of water soluble aniline blue in 100 parts of dist. water prepared by heat and then cooled. Decant as in the preceding inks.

RED COPYING INK.

("*Imperial Ink*," "*Isatin Ink*," "*Crown Ink*," "*Coral Ink*," *etc.*)

Dissolve 50 parts of extract of logwood in a mortar in 750 parts of distilled water without the aid of heat; add two parts of chromate of potassium and set aside. After twenty-four hours add a solution of 3 p. of oxalic acid, 20 p. of oxalate of ammonium, and 40 p. of sulphate of aluminum, and 20 p. of distilled water, and again set aside for twenty four hours. Now raise it at once to boiling in a bright copper kettle and add 50 p. of wood vinegar; and after cooling fill into bottles that must be corked. After a fortnight decant.

This ink is red in thin layers, writes red, gives excellent copies in brownish color, and turns blackish-brown upon the paper.

VIOLET COPYING INK.

(Hæmatin Ink; Victoria Ink, etc.)

Dissolve 40 parts of extract of logwood, 5 of oxalic acid, and 30 of sulphate of aluminum, without heat, in 800 parts of distilled water and 10 parts of glycerin; let stand twenty-four hours. Now raise the mixture once to boiling in a bright copper boiler, mix with it while hot 50 parts of wood vinegar, and when cold put into bottles. After a fortnight decant it from the sediment.

In thin layers this ink is reddish violet; it writes dark violet, and furnishes blueish violet copies.

Gonorrhœa.—Ichthyol is now *de rigueur* in the treatment of this affection in Paris. The following is the formula:

Ichthyol	ʒ j
Water	ʒ viij

Three injections daily.

Practical Training in Pharmacy.

The current number of the *Alumni Report*, the journal of the Alumni Association of the Philadelphia College of Pharmacy contains the following interesting contribution to the articles printed recently in these columns regarding the relative value of shop and college training :

Quite an interesting discussion has lately arisen in pharmaceutical circles as to the relative value of the practical training in pharmacy of the college laboratories, and that of the shops. On the one hand it is contended that the laboratory of a pharmaceutical college alone is the best place for practical instruction; on the other hand, it is claimed that while college laboratory work may greatly aid the student to a better knowledge of practice, it can never wholly replace shop experience in value. Now, which is right? Is it true that the time-honored practice of serving "an apprenticeship of at least four years, with a person or persons engaged in and qualified to conduct the drug business," has lost its original value, and that the hour has come when the laboratory instruction of the college shall wholly supersede shop training?

We doubt it. There is shop training, and there is *shop training*. In the one case you have a qualified pharmacist and a good teacher, and in the other an unqualified pharmacist and a poor teacher. Naturally, the value of an apprenticeship is dependent upon the ability of the preceptor to teach. In the older centers of population, where the proportion of pharmacists qualified and willing to teach apprentices is large, students find little difficulty in securing good preceptors; in the newer centers, where the proportion of pharmacists qualified and willing to teach is small, students must largely depend upon the practical instruction afforded by college laboratories. In such cases, it is evident, that the practical training of the college may be superior to that afforded by the local shops.

But this does not affect the fact, that where proper apprenticeship is easy of execution, it has certain advantages which render it worthy of the high esteem in which it has long been held. One of these is, daily practice in handling drugs and making preparations directly on the lines that the apprentice will follow in the future. The laboratory of a college may be a most efficient aid to theoretical instruction and all that one could reasonably ask—in fact, is indispensable—but there are a hundred and one details in the daily work of a pharmacist which the college cannot teach save only in a general way; and it is, in part, the gradual accretion of these many isolated facts, firmly impressed on the mind by daily work, that go to make up a well rounded and fully-trained pharmacist. Of themselves, they avail little; allied with college training in theory and practice, they are too valuable to be dispensed with.

Further, shop training begets a self-confidence in meeting emergencies that no college practice alone can possibly give; and self-confidence, based on proper knowledge, means not a little in the successful practice of pharmacy. There is another advantage, and that is, that the apprentice brought daily in contact with a practical work-a-day life, comes to look upon the duties of his profession from a practical standpoint, so that when he goes to college, he does not place an undue value upon theories, but seeks to differentiate between matters of purely theoretical value, and matters of practical value, giving to each a proper place in his studies.

A short while ago, the editor of the *Report* addressed a letter to Dr. A. M. Davis, of this city (Philadelphia), a graduate of the Philadelphia College of Pharmacy, and in it asked : "Has your practical training in pharmacy been of any special service to you in medical practice?"

The answer was :

In response to query, I would say: Leaving aside all other considerations, such as the advantages had by a physician previously trained in pharmacy in prescribing, there is one feature of a drug store training that I consider of the highest value to a medical man, and that is, that such experience makes a man eminently practical in his thoughts and actions. My experience with medical students has been that the majority come from the higher schools of education to college brimful of theories, and with an absence of that practical knowledge of life which personal contact with the world alone can give.

They enter upon their studies with proper zeal, but they fail to differentiate between matters of theoretical value and matters of the most practical moment. Hence, when they graduate, they are illy prepared to cope with conditions in medical practice —and they are many—which demand for their solution practical methods. To my mind, the superior advantage of a preliminary training in practical pharmacy to a medical man admits of no argument; it is unquestioned.

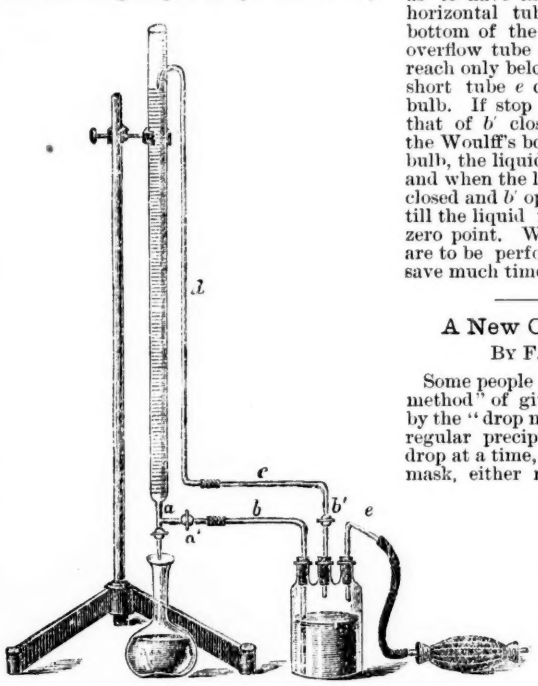
In addition to this, we have received a letter from Dr. H. Bedell Crane, Ph.G., of Newark, N. J., in which he says: "I would not take hundreds of dollars for my experience in pharmacy as an aid to the successful practice of medicine." Now, if it be true that shop training in pharmacy is of such value to medical men, how much more must it be of value to students in pharmacy?

Aluminum Borofomicate.—Martinson stated at a recent meeting of the St. Petersburgh Pharmaceutical Society that he had used this salt with the most satisfactory results as a succedaneum for the acetate, the aceto tartrate of aluminum, etc. It was found to act more surely and more mildly and also to be a disinfectanty.

New Apparatus Novelties, etc.

An Automatic Zero Adjustment for Burettes.

The burette is connected with a three-necked Woulff's bottle in such a manner as to have the tube *b*, connected with horizontal tube *a*, reach nearly to the bottom of the Woulff's bottle, and the overflow tube *d* connected with tube *c* reach only below the cork and a likewise short tube *e* connected with a rubber bulb. If stop cock *a'* is opened, while that of *b'* closed, and air forced into the Woulff's bottle by means of the rubber bulb, the liquid will rise in the burette, and when the latter is full stop-cock *a'* is closed and *b'* opened and kept in action till the liquid in burette has reached the zero point. When many determinations are to be performed this apparatus will save much time.—*Phar. Zeit.*



AUTOMATIC ZERO ADJUSTMENT FOR BURETTES.

A New Chloroform Bottle.*

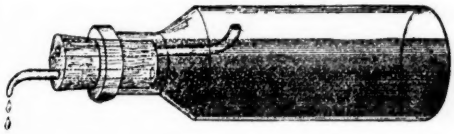
By F. Overholt, M.D.

Some people are advocates of the "drop method" of giving chloroform. I mean by the "drop method," a continuous and regular precipitation of chloroform, a drop at a time, on to a thin cotton or linen mask, either rapidly or slowly, as the judgment of the anæsthetizert hinks proper for the case in hand.

So far as I know, it is almost impossible to get chloroform from the so-called chloroform-droppers on the market, a drop at a time. Then earest approach to a dropper that would drop that came to my notice, prior to the present invention, was an ordinary bottle, with a cork having two notches opposite to one another, and that is seldom a success.

With this dropper one can have the chloroform a drop at a time either rapidly or slowly, depending on the amount of inclination given the bottle. It is impossible to get it "squirt by squirt;" it must always come a drop at a time. The dropper consists of a three ounce bottle and a cork with two glass tubes in it, one a flow-tube, the other a vent-tube. The flow-tube begins at the inner end of the cork, passes through it, is then drawn to a point, and turned down to a right angle. The vent-tube begins at the outer end of the cork, passes through it, and is bent and of such a length as to nearly reach the inside surface of the bottle at the bulge.

Now, numerous people have used the idea of two tubes, one flow and one vent;



but, so far as I am aware, no one has packed the conical point of the flow-tube with cotton to regulate the flow. Herein lies the novelty and the success of this dropper, for by this means the chloroform can be made to flow to suit any purpose. I pack it so that with the chloroform just on a level with the flow, it will drop very slowly, say once every six to ten seconds; then, by tipping the bottle

* From the *Medical Record*.

up, it will drop from sixty to one hundred and twenty a minute, which in my experience is as fast as is ever needed, provided the mask be thin and not covered with mucus or sputum.

The advantages are: 1, Anyone who can draw and bend glass tubing can make one in fifteen minutes; 2, it saves chloroform; and 3, it makes possible the giving of chloroform a drop at a time, the merits of which are not under discussion.

A Simple Microtome *

BY J. A. FORRET.

A microtome for all ordinary purposes may be constructed with the expenditure of a little time and trouble by any one possessing some knowledge of soldering, glass blowing, etc.

The instrument here figured in section is of the simplest description, yet is capable of producing good work. It is ready for use at a moment's notice, and does not readily get out of order. It is suitable for animal or vegetable tissues, and can be used with the material embedded in paraffin or frozen in mucilage.

The figure showsa cross section of the microtome as arranged for freezing. A and B are brass tubes. A being about three-quarters of an inch in diameter and B a little wider. The lower end of each is closed with as tout piece of brass, that at B being furnished with a screw (C). The upper end of A is notched as shown to allow free evaporation of ether and is surmounted by a piece of ruled copper or zinc. The tube B fits tightly into a piece of half-inch hard-wood (D) about 6 by 3 inches. Rigidity to B is secured by soldering round its upper end a metal collar (a stout piece of copper wire answers perfectly), and screwing down to D by screw nails, the heads of which impinge on the metal collar. Unless procured specially for the purpose, the tubes A and B will require some adjustment; the one must slide into the other tightly without oscillation. A simple means of accomplishing this is to use tubes, the one wider than the other by at least a quarter of an inch. On the outside of the narrow tube three brass or copper wires are soldered along the whole length of the tube, and at equal distances from each other. The best result is obtained by using wire a trifle thicker than is actually required, and reducing with a file when the wires are in position.

For cutting imbedded sections the narrower tube is replaced by one without the notches and ruled plate, but otherwise identical with A, and the paraffin block, carrying the specimen to be cut is fitted tightly into the open end of the tube.

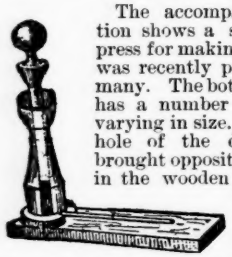
The spray-producer is made from ordinary glass tubing of fine caliber. F is connected by indiarubber tubing with a bottle containing ether, and a continuous bellows of indiarubber is attached to H. As a very small quantity of ether is sufficient the aperture of B is a mere pinhole. This tube is easily manipulated by drawing it out in a flame, cutting at the narrowed part, fusing the end, and grinding off the point on a hone. The two tubes are adjusted so as to produce a fine spray, and are then permanently tied together with thin cord or fine copper wire.

A longitudinal slit is cut in A and B, through which the spray tubes are passed, the latter being kept in position by an indiarubber band attached to D. The ether bottle is conveniently suspended from a small hook fixed to D. D is firmly screwed to a table or other suitable support of convenient height.

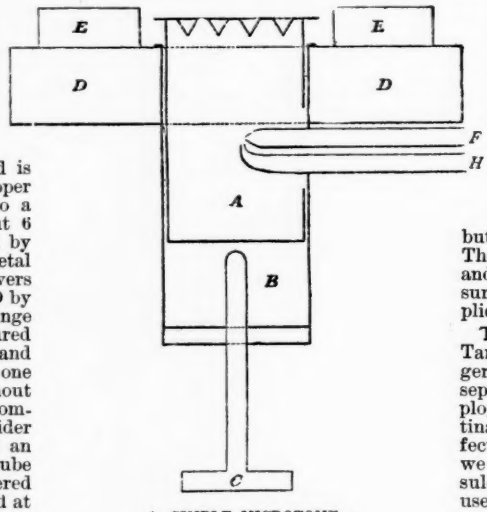
On the top of D, along each side of the well, is glued a narrow strip of plate-glass (E), about 3 inches long, to serve as a guide to the razor.

*From the *British and Colonial Druggist.*

Simple Bougie-press for Prescription Work.



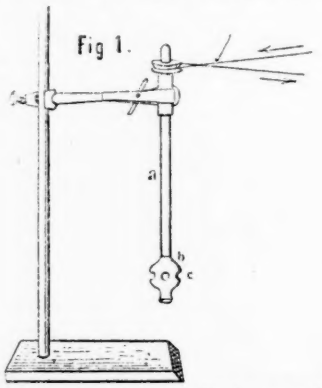
The accompanying illustration shows a simple form of press for making bougies which was recently patented in Germany. The bottom of the tube has a number of holes in it varying in size. In practice the hole of the desired size is brought opposite the open space in the wooden base and when pressure is exerted the bougie is extended. A mixture of 95 per cent. cacao butter with five per cent. of wax is recommended as a basis for use in this machine.



A SIMPLE MICROTOME.

A Mechanical Stirrer.

O. N. Watt has devised a mechanical stirrer to be moved by a turbine, an illustration of which is shown herewith. The stirrer consists of a glass rod, *a*, which is



turned by a turbine. On the lower end of the rod is a glass birne, *b*, 20 to 25 mm. in diameter, which is open at the lower extremity and has four holes, *c*, on the side. In use this stirrer, which can make 5,000 revolutions per minute, draws up the fluid through the bottom opening and ejects it through the holes on the side. The mixing is thus done thoroughly without making any foam as when stirrers with wings are used.

Medical Notes.

Lozenges to be used in congestion of the pharynx and larynx:

Chloride of ammonium, in powder	700 gr.
Tragacanth, in powder	140
Refined sugar, powder	280
Black current paste, as much as is sufficient.	

Mix the ingredients, and add the paste until the whole mass weighs 1 pound. Divide into 350 lozenges of 20 grains each, and dry in a hot air chamber at a moderate heat. Each lozenge will contain about two grains of chloride of ammonium.

Mercurial Ointment in the Treatment of Erysipelas.—In the *Medical Reporter* of Calcutta Dr. A. S. Sandel says that he has recently employed mercurial ointment in a case of erysipelas with extensive sloughing of the integuments of the chest and abdomen, after free incision and the usual constitutional treatment had proved insufficient to arrest the progress of the disease. Its use in this case was attended with such decided advantage that he determined to give it another trial as soon as a favorable opportunity occured. Within three weeks a similar case came under his observation. The patient was an Ooriah and rather aged, but he recovered under the treatment. The ointment was spread on fine linen, and with that the whole of the inflamed surface was kept covered. It was not applied on the open sores.

Tannin as an Intestinal Antiseptic.—Tannin is one of the most efficient of all germicides for use as an intestinal antiseptic. We have for several years employed this agent as an antiseptic in intestinal catarrh, and with most excellent effects. When administered by the mouth we have usually given 3-5 grains in capsule two or three times a day; but most useful results are also to be gained, especially in cases of pseudo membranous catarrh of the intestines, by first washing out the bowels with a large quantity of hot water, and then injecting a solution of tannin of the strength of one drachm to a pint.—*Dr. Braczkiewick.*

The Antiseptic Treatment of Burns.—In the *Centralblatt fur Chirurgie* for February 17 we find an abstract of a Paris thesis on this subject by Madame (or Mademoiselle) Nageotte. After a very interesting historical introduction concerning the methods formerly employed in the treatment of burns the authoress states that the best results possible are attained by maintaining on aseptic condition of the wound She says that, especially in very painful burns, it is best to employ general anæsthesia, in order that the application of the antiseptic process may not be interfered with. After the wound has been rendered aseptic she endeavors, wherever it is possible, to procure its healing under a dry dressing whether the burn is of the first, the second, or the third degree, and uses as disinfectant agents iodoform, thiol, ichthyol, and particularly bismuth subnitrate as recommended by von Bardeleben. She adds histories of forty-five cases.

Queries and Answers.

We shall be glad, in this department, to respond to calls for information bearing on pharmacy or any of its allied topics, and cordially invite our friends to make use of this column.

When sending for the formula of an unusual, patented or proprietary compound, the query should be accompanied with information regarding the locality in which it is used, its uses, and reputed effect. When it can conveniently be done, a specimen of the label used on packages of the compound should also be sent

Phosphorous Rat Paste.—L. W. S. writes: "Can you give me a satisfactory formula for phosphorous rat paste? That I have been making either ferments or dries up so much in a short time that the preparation rattles when the box is shaken."

We give a formula below which has been used with extremely gratifying results as affording a compound of relative cheapness and permanency when compared with the pastes of the market.

Starch	4 ounces
Flour	12 ounces
Glycerin	11 ounces
Water	q. s.
Phosphorous	1 ounce

Upon the unpulverized starch, placed in a convenient vessel, pour ½ pint of water, stir up the mixture and pass through a No. 60 sieve into a cast iron enameled kettle having the capacity of a gallon or more; add 12 ounces of water, then the flour and mix thoroughly, and apply heat by means of a sand bath until the plasma begins to form, stirring in the meanwhile constantly with a suitable pestle; then take the vessel from the fire and stir as before, while the plasma forms, so as to evenly divide it; after a few minutes reapply heat, stirring briskly until the plasma has completely formed, and then set it aside to cool, stirring it occasionally. Now place 1 ounce of phosphorous in stick into a glass-stoppered bottle (wide mouth) containing 12 ounces of glycerin, by weight, place the bottle into a water bath, apply a gentle heat, and shake often and quick, when the phosphorous will be completely divided through the liquid. Take a portion of the plasma, mix it gradually with four ounces of water, and add about one-fourth of the mixture of phosphorous and glycerin (shake well before adding) at a time, until the whole is thoroughly mixed, which should be done very quickly and in the open air, the operator being careful to tie a cloth around his mouth and nose, so as not to inhale too much of the fumes that arise. The result will be a fine smooth paste in which the phosphorous is evenly divided. It should be immediately bottled in small wide mouth bottles. Such as morphine bottles answer very well, of which pharmacists have always more or less on hand.

Cream Camphor.—We are in receipt of a communication from Asa Jones, M.D., Philadelphia, in which he states that the formula for cream camphor or milk of camphor, as given in our issue of March 8, does not furnish the genuine article. He further states that the term "cream camphor" is his "private property by authority of the United States government" and concludes his note with "please correct your statement." As Dr. Jones' right to the title "cream camphor" was not questioned or even referred to in the formula which gave occasion to this note we are at a loss to understand what has prompted Dr. Jones to seek a "correction."

Solution of Bromide of Gold and Arsenic.—We are in receipt of a letter from E. M. Johnson & Co., in which they call in question the value of the formula for solution of bromide of gold and arsenic which was published in this journal for January 25, page 43, from *Notes on New Remedies*. It is claimed that this formula is chemically inaccurate, not representing the equivalency of tribromide of arsenic either in respect to bromine or arsenic.

It is further stated that the widest difference exists between the preparation made after this formula and that of Dr. Barclay, which it is presumably supposed to duplicate.

With a view of ascertaining the chief points of difference, if any, between the two compounds (Dr. Barclay's Solution of Bromide of Gold and Arsenic and that made according to the formula referred to), we subjected each to a number of tests.

Dr. Barclay's Solution of Bromide of Gold and Arsenic, which we shall hereafter refer to as "Sample A," and the preparation as made by the *Notes of New Remedies* formula, which shall be referred to as "Sample B," were each tested roughly for hydrobromic and arsenic acids by ferrous sulphate. The addition of this reagent to Sample A almost decolorized the solution, but did not otherwise affect it, while Sample B acquired a milky hue, which changed rapidly to a dirty green color, with the formation of a dense precipitate of ferrous arseniate $Fe_3(AsO_4)2$.

This preliminary experiment was convincing that Solution A differed in chemical constitution from Solution A.

In order to avoid the imputation of arriving too hastily at a conclusion, additional tests for the detection of arsenic acid were made as follows: After the precipitation of the gold in Solution B by metallic zinc and passing chlorine gas through the solution in excess; removing the liberated bromine by carbon di-sulphide (the latter together with free chorine being afterwards expelled by heat) the solution was neutralized with aqua ammonia and the following tests were applied:

1. *Test solution of silver nitrate.*—This applied to the neutral solution (Solution B) yielded a white precipitate of chloride of silver which was thrown down immediately upon the application of the reagent; and lastly a dark brown precipitate of silver arseniate insoluble in aqua ammonia thus indicating the presence of arsenic acid.

2. *Test solution of plumbic acetate* yielded a white precipitate of lead arseniate insoluble in water.

3. *Test solution of ammonium molybdate.*—When gently warmed with this solution a yellow precipitate of arsenomolybdate of ammonium is thrown down.

4. On addition of aqua ammonia, ammonium chloride and magnesium sulphate to the solution there is yielded a crystalline precipitate of magnesium-ammonium arseniate, $MgNH_4AsO_4 + 6H_2O$.

5. *Test solution of cupric sulphate.*—The grass green precipitate first formed upon the addition of this solution was dissolved in sodium hydrate solution and yielded a precipitate of cuprous oxide Cu_2O.

The foregoing tests were applied to Solution A with indifferent or altogether negative results, and we may therefore conclude that the two preparations are not identical in composition. The results of these experiments would indicate that E. M. Johnson & Co. have discovered some hitherto unknown method of combining bromide of gold and arsenic in stable form.

Mary Stewart Perfume. C. O.—This is said to be closely imitated by the following formula:

Extract ambergris (1 dr. to 1 pt.)	2 fl. ozs.
Extract vanilla (6 dr. to 1 pt.)	4 fl. ozs.
Extract jasmin	6 fl. ozs.
Extract musk (1 dr. to 1 pt.)	4 fl. ozs.
Extract orris (8 oz. to 1 pt.)	8 fl. ozs.
Extract rose	1 pint
Oil bergamot	2 fl. ozs.
Deodorized alcohol	4 pints.

Mix and macerate two weeks before filtering.

Seiler's Solution. F. P.—A printer's oversight is responsible for the error referred to. The sign ℈ii should read Oii.

Bottle Filler Wanted.—C. H. M. writes: "Please give the address of some one who manufactures a bottle filler in the shape of a percolator with a small opening at the bottom and a tube just large enough to fill the opening, with a spring on top to raise the tube to let the liquid pass out."

Perhaps some of our readers can supply this information.

Bibliography.

A System of Instruction in Qualitative Chemical Analysis. By Arthur H. Elliott, Ph.D., Professor of Chemistry and Physics, and Director of the Chemical Laboratory in the College of Pharmacy of the City of New York. Second edition. 1894: Published by the author, College of Pharmacy of the City of New York, $1.50.

The fact that the author has found it necessary to issue a second edition of this excellent manual so soon after the publication of the first affords an indication of the warmth of the welcome which the book has received at the hands of those for whom it was intended. Already it has been adopted as a text book for practical instruction in six teaching institutions and the work bids fair to take chief place among the indispensable manuals of its class. In our earlier review of the work we commented on the rather slow and tedious method which the author had given for the separation of barium from strontium and calcium. In the new edition we find an alternative method given which will commend itself to teachers and others as eminently practical and convenient.

As a text book for the chemistry classes of colleges of pharmacy the work is sure to find increasing favor. The book is clearly printed on good paper and excellent taste has been displayed in the binding.

The Latin Grammar of Pharmacy for the use of medical and pharmaceutical students. With an essay on the reading of Latin prescriptions, and reference vocabulary (enlarged). By Joseph Ince, F.C.S., F.L.S., F.G.S., Associate of Kings College, London; lecturer in pharmacy to the Pharmaceutical Society of Great Britain, etc. Sixth edition. London: Baillière, Tindall, & Cox, 20 King William street, Strand, 1894.

In England and Scotland, where Latin forms an important subject of both the Preliminary and Minor examinations of the Pharmaceutical Society of Great Britain, Ince's widely known compendium enjoys a well deserved popularity. In point of practical usefulness as determined by the space given to Latin prescriptions and medical formulas it is not approached by any work of a similar kind. It is a work which we think might be included with advantage among the text books of American colleges of pharmacy as it contains just the explanations of the grammatical construction and descriptive character of the Latin language which students of pharmacy need most. The vo-

cabulary of the technical phrases with which the volume closes is remarkably full and will in itself prove of great value to students. We are enabled to present this notice of the work through the courtesy of the author, who, however, needs no introduction to American pharmacists, as his reputation as a teacher and author is widespread and not confined to Great Britain alone.

A Class Compend of Pharmaceutic Botany, embracing an elementary treatise on the structural, morphologic, microscopic, physiologic and systematic department of botany, designed especially for students of pharmacy and pharmacists. By David M. R. Culbreth, Ph.G., M.D., Professor of Botany, Materia Medica and Microscopy in the Maryland College of Pharmacy, with a synopsis of the natural order that include the vegetable drugs of the U. S. Pharmacopœia, 1890. Illustrated. Baltimore, 1893. Published by the author.

The author both by education and experience is well fitted for the task which he has undertaken, and in the practical nature of the work and in its general scope the influence of his experience as a pharmacist is visible.

There is no doubt but that the volume will be of much value in aiding the pharmaceutical student to master a somewhat neglected portion of the curriculum.

The Physician's Wife; and the Things that Pertain to Her Life. By Ellen M. Firebaugh. With portrait of author and 44 photo-engravings of original sketches. In one crown octavo volume of 200 pages. Extra cloth, $1 25 net. Special limited edition, first 500 copies numbered, and printed in photo-gravure ink on extra fine enameled paper; bound in half leather and vellum cloth, $3 net. Philadelphia: The F. A. Davis Co., publishers, 1914 and 1916 Cherry street.

This work is evidently intended as a companion volume to Cathell's "Book on the Physician Himself." The authoress, who writes in a pleasing and chatty strain, acknowledges having perused the latter with "great gusto," and we are given to understand that she conceived the idea of enlarging a pamphlet to the dignity of a book from the example of the writer named She has made diligent search among the works of the ancient medical writers for references to the physician's wife," but from what we can gather has been most unsuccessful in her quest. The work will perhaps find favor with the wives of country doctors, to which, the authoress tells us, it relates especially, but it can in no sense be compared to the admirable work of Cathell, which has now reached a tenth edition, and is published from the same office.

The Modern Climatic Treatment of Invalids with Pulmonary Consumption in Southern California. By P. C. Remondino, M.D., Member of the American Medical Association; American Public Health Association; ex-Vice-President California State Medical Society; Member of the State Board of Health of California; and President of the Board of Health of the City of San Diego, etc., etc. 12mo, paper, pp. 126; price 25 cents. [Physician's Leisure Library Series.] Geo. S. Davis, Publisher, Detroit, Mich. 1898.

Dr. Remondino is a charming writer and an authority of some repute on climatology; he has given the subject much thought, and his little work will repay a perusal by every one interested in the climatic treatment of tuberculosis of the lungs

Quinine Historically.—A paper read at the twelfth annual meeting of the Virginia Pharmaceutical Association, September 14, 1893, by Robert Brydon Danville, Va Reprinted from the proceedings of the Virginia Pharmaceutical Association.

This pamphlet contains 26 pages of interesting statistical and historical information pertaining to cinchona and the cinchona alkaloids with especial reference to quinine. Its compilation must have entailed unusual labor and necessitated considerable research, and the author will receive the thanks of all interested for presenting in convenient form for reference so much information of value on so important a drug.

Mineral Resources of the United States, calendar year 1892, by David T. Day, Chief of Division of Mining Statistics and Technology. Washington: Government Printing Office, 1893.

This is the ninth volume of the series of reports issued under the same title begun in 1882. It contains much matter of interest and of great commercial importance. Among the most interesting of the papers contained in the volume is the report of George F. Kunz on precious stones.

Seventh Annual Report of the Nebraska State Board of Examiners of the State Board of Pharmacy with abstract of State Pharmacy Register and Pharmacy Law, 1893. M. E. Schultz, secretary, Beatrice, Neb.

This contains a list of the registered pharmacists of the State and some interesting decisions of the Attorney-General on the Nebraska Pharmacy Law.

Books, etc. Received.

The Wilson Tariff Bill as presented to the House of Representatives together with an alphabetical list showing proposed new duty. New York and Philadelphia: F. B. Vandergrift & Co.

Proceedings of the Twelfth Annual Meeting of the Nebraska State Pharmaceutical Association, held at Nebraska City, Nebraska, June 6-8, 1894.

University of Minnesota. Special Announcement of the College of Pharmacy of the Department of Medicine.

Prospectus of the St. Louis College of Pharmacy, Twenty-eighth Annual Session.

Proceedings of the Michigan State Pharmaceutical Association, held at St Clair Flats, June 19-22, 1893.

Proceedings of the Minnesota State Pharmaceutical Association, at the ninth annual meeting held at Hotel St. Louis, Lake Minnetonka, June 13 and 14, 1893.

A Critical Review of the Seventh Decennial Revision of the Pharmacopœia of the United States of America. By George M. Beringer, A.M., Ph.G. Reprinted from the *American Journal of Pharmacy*. Pp. 47.

Lectures on Auto-intoxication in Disease, or Self-poisoning of the Individual. By Ch. Bouchard, Professor of Pathology and Therapeutics, etc, Paris. Translated, with a Preface by Thomas Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham, etc. Phi'adelphia: F. A. Davis & Co., 1894. Pp. xvi, 302. [Price, $1.75.]

Catalogue des Pièces d'anatomie humaine. d'anatomie comparée at d'anatomie botanique, Mars, 1894. Maison Emile Deyrolle Les Fils D'Emile Deyrolle, Naturalistes, Successures, Paris, 46, Rue du Bac (Téléphone).

Importance to the Surgeon of a Bacteriological Training. By Hunter Robb, M.D., Associate in Gynecology (Abstract of an article read before the Clinical Society of Baltimore, December 1, 1893). Reprint from the Johns Hopkins Hospital Bulletin, No. 36, December, 1893.

Maintenance of an Aseptic Technique in Gynecological Operations Outside of Hospitals. By Hunter Robb, M.D., Associate in Gynecology. Read before the Medico-Chirurgical Faculty of Maryland at Annapolis, November 22, 1893. Reprint from the Johns Hopkins Hospital Bulletin, No. 35, November, 1893.

A New Spigot Attachment to Facilitate Asepsis. By Hunter Robb, M.D., of Baltimore, Associate in Gynecology, Johns Hopkins University. Reprint from the Annals of Surgery, February, 1894.

The Importance of Employing Anæsthesia in the Diagnosis of Intra-Pelvic Gynæcological Conditions. Demonstrated by an analysis of 240 cases. By Hunter Robb, M.D., Associate in Gynecology, Johns Hopkins University. Reprint from the Johns Hopkins Hospital Reports, Vol. III, Nos. 7, 8, 9, Baltimore, Md.

Twenty-Sixth Annual Report of the New York Orthopædic Dispensary and Hospital, 126 and 128 East 59th street, 1894.

Shall the Practice of Medicine and the Practice of Pharmacy Continue Distinct and Separate? Read in the Section on materia medica and pharmacy, at the Forty-fourth Annual Meeting of the American Pharmaceutical Association. By J. M. Good, Ph.G., St. Louis, Mo.—Reprinted from The Journal of the American Medical Association, January 6, 1894.

Quiz Box.

This series of questions will be continued each week. The answers to each series of questions will appear in the issue for the third week following their publication. All of our readers are invited to compete for the prizes named below.

Replies must be in our hands within two weeks after the appearance of the questions. The names of all making an average of 75 per cent. will be published each week.

Address Editor Quiz Box, 37 College place, New York.

First Prize.—A new Dispensatory, latest revised edition, will be awarded to the person who makes the highest general average of answers for the *entire* series of questions as published from March 22 to June 28, 1894.

Second Prize.—Copies of Harrop's "Monograph on Flavoring Extracts" will be awarded to the three persons who make the next highest general average for the entire series of questions.

Third Prize.—A copy of Heebner's Manual of Pharmacy and Pharmaceutical Chemistry will be awarded to the person sending in the most satisfactory replies to any three sets of questions, but who does not win either of the other prizes.

Fourth Prize.—A copy of Lloyd's "Elixirs" will be awarded to every person who sends in an answer to *every one* of the questions published in the series, making an average of 66 per cent.

Give the definitions of the following terms in your own language:

1. Physics.
2. Chemistry.
3. Botany.
4. Pharmacognosy.
5. Pharmacology.
6. Pharmacy.
7. Materia medica.
8. Therapeutics.
9. Posology.
10. Metrology.

11. What is physical incompatibility; give an example?

12. From what is glycerin made; what is its formula, and what impurities are generally present?

13. When ammonium carbonate is added to syrup of squills what reaction occurs?

14. What is the difference between Donovan's solution, Fowler's solution and Clemens' solution?

15. What is creasote obtained from; how may it be distinguished from carbolic acid?

Mineral Acids in Vinegar.—The *Chemiker Zeitung* recommends the following test. A cubic centimeter of the vinegar is placed in a capsule and one drop of an alcoholic solution of rosaniline hydrochloride (25 gr. fuchsin in 100 Cc. 90 per cent. alcohol) added. If the vinegar is pure the liquid will retain a reddish violet color; if mineral acids are present, even to the extent of one per cent., the liquid becomes dirty yellow. The characteristic color of fuchsin is again restored after neutralizing with alkali.

Phenocol.—The melting point of the purified base in the hydrated condition is stated by Dr. Francesco Nicola to be 113° instead of 95°, as usually given, and the anhydrous base melts at 99°.5 When phenocol is heated somewhat above its melting point, ammonia is given off, and the residue dissolved in water gives a fine red violet color when a few drops of ferric chloride solution are added. The hydrochloride, which has hitherto been described as anhydrous, crystallizes with one molecule of water. Nicola confirms Fischer's statement that phenocol dissolved in 20 parts of water at 15°.5 to 16°. The salt melts with partial decomposition at 254°, beginning to cake together at 200°, and becoming slightly brown at 230°. The residue after melting, dissolved in water, and mixed with a drop of ferric chloride solution, gives an intense reddish violet color, which is considered by Nicola to be a useful means of identification(*Annali di Chimica e di Farmacologia*).

Business.

Under this head will be conducted a department on the promotion of the business interests of the retail druggists in all their aspects, including that of advertising.

Our readers are invited to offer suggestions, to submit specimens of advertisements and to send inquiries on any points in which they are interested.

Written for the American Druggist and Pharmaceutical Record.

How to Advertise.

By B. O. Kyseth,

Of Kyseth & Tolleson, Lansing, Mich.

This is a question which is of greater importance to the druggists than a great many seem to think it is. Some say, advertise through the local papers, while others seem to think that show bills, dodgers, etc., are the best.

When we pick up our newspapers we find sometimes whole pages devoted to some clothing or dry goods firms' advertisement, or to that of some patent medicine house, lauding their sarsaparilla or nervine, but we fail to find any retail druggist's advertisement, or if there is any it is in some out of the way place, or in such a shape that it would not attract attention. Without doubt, the best way to reach the public at large is through newspaper advertising. Newspapers are to be found in nearly every house in this country and when we advertise in them our advertisement is spread far and wide throughout the land.

The large dry goods firms claim that it pays to use printers' ink; why should it not pay for the retail druggists as well, if it's used in the right way. I believe the greatest trouble with many of us druggists has been that we did not know how or else did not try to advertise our business to advantage and in a profitable way, and have therefore thought that what we paid out for advertising was just so much money thrown away.

I thought that way myself until I found that I was entirely mistaken. I find (especially among the country druggists) in many places, that when they have an advertisement in the local paper, which will read something like this: "John Jones & Co., dealers in drugs, medicines, paints, oils, brushes, stationery, wallpaper, druggists' sundries, perfumes, putty, glass, etc.," and then it's left in that shape until John Jones & Co. retire from business, or fail. Now, I believe that kind of advertising is just about that much money wasted. The people will probably read it once, and that is all. They get tired of looking at it.

I have been reading the "tips on advertising" in The American Druggist and Pharmaceutical Record and can say for myself, that it has been the most profitable knowledge that I have ever gained from any drug journal.

When I found the way that other druggists advertised their business, I began to think that I did not know anything about how to advertise, but I at once began to give that part of my business more attention. We pay a certain amount for a space in our local paper, and have the privilege of changing it every week if we wish to do so. I don't believe in running an "ad" in the paper more than once or twice without changing it, and I always put it in such a shape that the readers' attention will be called to it at a glance. I put in some attractive head line and after his attention is called to it the reader will, in most instances, read the whole advertisement, if it is gotten up in a business like form.

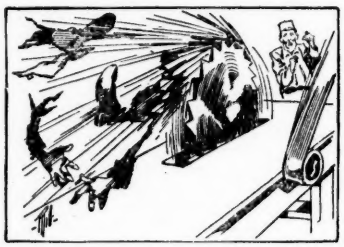
We don't try to advertise everything we keep in the store at once, but take one line at a time, and advertise it only in its season. When it is the season for cough medicines we advertise them, and when it is the season for cholera remedies we give them a push. We have a specialty in the cough syrup line (Dr. Moore's Arabian honey) which we always make a point to bring into our "ad" during the cough syrup season, and we have found that it pays to do so, as we have sold more of this cough syrup alone than of all the other cough medicines we handle put together, and I can't see any other reason for it than because we have advertised it and pushed it in its season.

I believe in druggists putting up a few of their own specialties to push at the different seasons of the year.

In the prescription department the greatest advertisement we can make is the neatness and accuracy of our work, and which gain the confidence of the people. I would never cut on the prices of prescriptions, because if I did the people and the doctors would then think that I was using poor and inferior drugs in the compounding of prescriptions, and in place of gaining trade I would lose it.

I always impress upon the minds of our customers that the best of drugs are none too good for our prescription case; that this is the only kind of goods we use; that we positively will not use an inferior quality of drugs, and that the price of a drug does not cut any figure with us when we buy our goods. It will sometimes do in other lines of business to handle cheaper grades of goods, but when a customer brings in a prescription to be filled he always wants the best of medicines that can be had, regardless of price. Prescriptions are something that the people at large don't know anything about, and when they go to a drug store to get it compounded they leave it entirely to the druggist's honesty and skill, and for that reason it is necessary that we gain the people's confidence.

It is sometimes a good idea to give a brief history of the medical properties, doses, etc., of one of our most commonly used drugs, also its different preparations with their doses, etc., and



CUT ALL TO PIECES.

That's what's the matter with prices at our store. Times are hard, we want to keep busy, therefore we will clear out all our fancy goods stock at—well, we don't *want* to sell them at a loss, but some of them will have to go at less than cost.

We don't keep old goods—we sell them before they get old. We don't keep old drugs. If we can't sell them fresh we burn them up or throw them away.

That's why our store is popular. Fresh goods, fresh drugs, all of the best quality.

Z. Taylor Clark.

BAYONNE, N. J.

SEE THE RUSH.

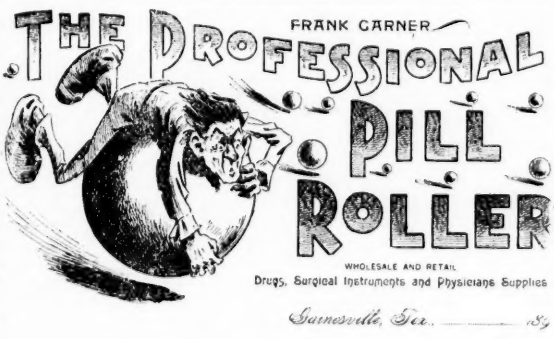
It's my soda water. They always come in crowds because it's the best in town. Just like my drugs, they're the best that can be had.

There are two things you want good, your soda water and your drugs. I have them, all ready for you, but come early and avoid the rush.

RUSH HOURS: 9 to 11 A. M. 8 to 9 P. M.

C. W. KNAPE,

CARLSTADT, N. J.



A Texas Idea.—*From Printers' Ink.*

then tell them it can be had at our store and that we guarantee absolute purity.

From an advertisement of this kind the people will gain the idea that you are well posted upon medicines, and as they read it for what knowledge they can gain from it they will look for your next "ad."

I do not take much stock in circulars, but sometimes the right kind of a "dodger" may do some good. We have one of which we have a supply laying on our counter (where we can reach it without much effort) which we inclose in every package that goes out of our store, and I believe it has done considerable good; besides they are a cheap way of advertising.

And after all this is done through the printer's ink I believe in keeping your store neat and clean, handle pure and reliable goods, be honest and truthful, wait upon the poor as politely as the rich, greet your customers with a pleasant look, and always attend to your own business.

"Well bought is half sold." Read the "trade notes" and market review every week.

We mentioned not long since a very simple form of bookkeeping as practiced by a New York pharmacist. This consisted in keeping a series of slips on one of which each customers' account was kept. These slips were arranged alphabetically and were destroyed as the accounts were paid. One of the readers writes us of a somewhat similar method pursued by a busy Brooklyn pharmacist. This gentleman has a slip of paper on his desk at the head of which the day of the month is written. All charges are entered on this slip as they would be in a blotter. At night these entries are copied on strips of paper, there being a separate strip for each customer's account. These strips are then placed on ordinary wire bill files of which there are a sufficient number to allow of an alphabetical arrangement. When a bill is paid the slip is receipted and turned over to the customer.

Read the "trade notes" and the market review every week if you want to keep posted.

The following is a rather unusual "reader" run by a Bridgeport, Conn., druggist in his local paper:

The necessity of having a prescription compounded by a thoroughly competent person is being realized more and more every day. It might be a question of "life and death" when the prescription is in the hands of the druggist. Cyrus, the druggist, Fairfield avenue, foot of Courtland hill, has received diplomas of examination from Sweden, 1835, Massachusetts, 1888, New York, 1889, and Connecticut, 1893.

There are scores of business men who when told that the circulation of a trade paper is 3,000 to 4,000 are inclined to ridicule its claim as an advertising medium, not knowing that a single edition of a trade paper, having a circulation of 1,000 copies reaches more persons whom they wish to reach than the issue of a daily paper of 100,000 copies. Those who may be surprised at this statement and imagine that the figures are incorrect may easily convince themselves of their error by referring to the commercial agency reports. To reach the consumer of general merchandise the daily papers are a valuable medium; to reach those particularly interested in trade, the trade papers alone cover the field.—*Journal of Building.*

"Well bought is half sold." Read the "trade notes" and market review every week.

The Apothecaries' Guild of Boston and Vicinity.

The foundation for this Guild was laid at the meeting of the Massachusetts Pharmaceutical Association, held at Springfield in 1892, when, after a discussion of the pros and cons of local organization $200 was appropriated for the purpose of forming local organizations throughout the state. The matter was intrusted to the charge of an efficient committee composed of Henry Canning, chairman, and William C. Durkee, Geo. W. Cobb, Fred. L. Carter, and W. F. Sawyer.

As a result of the deliberations of this committee it was decided to inaugurate the movement in Boston and this was accomplished by securing the services of a paid agent to canvass the trade. The results proved this step a wise one, for in nearly every instance the druggists called upon and found in signed the petition for a meeting for the purpose of organization. By this method over 200 signatures were secured, and then Mr. Canning issued a vigorous call, and the Guild became a certainty on January 30, 1893. The officers elected at that time were: N. W. Styles, president; C. P. Flynn, vice-president; C. A. Bartlett, secretary, and Geo. W. Cobb, treasurer. Executive committee, S. A. D. Sheppard, W. C. Durkee, C. A. Charles, C. A. Miller, A. L. Wyman, H. S. Garcelon, G. W. Flynn, C. A. Brown and J. W. O'Mealy. Subsequently Secretary Bartlett resigned and F. W. Reeves of Cambridge was appointed to that arduous position.

N. W. STYLES.

President of the Apothecaries' Guild of Boston and Vicinity.

With this single exception the officers above mentioned were re-elected at the annual meeting of January last.

Here is the preamble, constitution and by-laws which were adopted and under which the body has since acted.

PREAMBLE.

The members of this association declare its object to be the advancement of the mutual interests of its members.

CONSTITUTION.

ARTICLE I.

SECTION 1. This association shall be known as "Apothecaries Guild" of Boston and vicinity.

SEC. 2. The officers of this association shall consist of a president, vice-president, secretary, treasurer, and ten directors, who shall constitute an executive committee.

SEC. 3. The secretary and treasurer shall make a report at each regular meeting.

SEC. 4. Any retail druggist recommended by the executive committee may become a member of this association by the payment of $2 and signing the constitution and by-laws.

SEC. 5. Any amendment of the constitution or by-laws shall be put in writing and remain on the table until the next regular meeting; a vote of two-thirds of the members present shall be necessary for its adoption.

BY-LAWS.

ARTICLE I.

SECTION 1. The regular meetings of this association shall be held on the first Thursday of each month at 2.30 P.M. Special meetings may be called by the president and secretary, and shall be called on the written request of ten members.

SEC. 2. Ten members shall constitute a quorum.

SEC. 3. All questions of parliamentary law shall be decided according to Cushing's Manual.

ARTICLE II.

SECTION 1. The regular meeting in January shall constitute the annual meeting for the election of officers.

SEC. 2. The officers of this association shall be elected by ballot. At the regular meeting in December a nominating committee composed of five members shall be chosen by the house, they to report at the annual meeting in January.

Volunteer canvassers immediately came forward, and they were divided into districts, and in this way many more signatures were secured, until now the Guild has the magnificent membership of 331. Its membership, as its name suggests, is not confined to Boston, and druggists from Cambridge, Somerville and Malden are included in its ranks. Money is a prime necessity in organization of this character, and the rule has held good in the present instance. A dollar of every two received has been forwarded to the officials of the Interstate League for membership in that body, and the affairs of the home organization have, of course, entailed an expenditure of cash.

As soon as the Guild assumed definite shape druggists in other sections of Massachusetts and other States became interested in the movement, and as a result of many inquiries Mr. Canning and the officers of the Boston organization soon found themselves in receipt of a voluminous correspondence. Messrs. Canning, Cobb and others were also importuned to visit different cities to further local organization. This has been done as far as practicable, but at great personal sacrifice to the Boston men, and as a result we find flourishing organizations in Lowell, Worcester County, Springfield and Rhode Island, and in consequence of seed previously sown other eastern cities are ripe for harvesting.

Secretary Reeves has just finished an important canvass, during which he visited about twenty towns in the vicinity of Boston and called upon 440 retail druggists; of this number only 15 refused to subscribe to the League plan which was adopted at the New York meeting.

C. A. Charles of Malden has just organized Brockton, and the signers from the latter city have forwarded their membership money to the League officers. Mr. Charles has also visited Salem and Lynn in the interests of the League. President Styles of the Guild, William C. Durkee and many others have done yeoman service in the interest of organization. These gentlemen have all generously contributed their time and money to this praiseworthy effort. In Secretary Reeves' case, for example, a great amount of labor was involved in his canvass, and how well he accomplished his purpose is shown by the

result. That the Guild disbelieves in shading its light under the proverbial bushel is seen in its action in sending Mr. Canning to Chicago to attend the Interstate League meeting. It has also sent delegates to New York to organize that city, and it was represented by three delegates at the Feb. 6 meeting held in this city. Messrs. Canning and Cobb stopped at New Haven, on their returning from New York, to attend the meeting of the Connecticut Pharmaceutical Association, and as a result of their efforts, that association voted the sum of $200 for the purpose of organizing that State.

In Rhode Island there is but one organization, the "Mortar and Pestle Club," and its formation was partly due to an ingenious scheme which at present is being elaborated upon in other sections. It was accomplished by invoking the aid of the drummer, who, if anyone, is always in touch with the retailers, and Irving W. Smith, representing George L. Claffin & Co. of Providence, was the man who did this work most creditably.

President Canning recognizes the influence of the drummer and is endeavoring to perfect arrangements whereby the trade may be largely organized with this basis. What Mr. Smith accomplished in Rhode Island, other traveling men can bring about in other States, and, as our New England wholesalers are heartily supporting this idea, it seems to be an assured certainty in this section.

In pursuance of this plan, President Canning of the Interstate League has had a large number of blanks for obtaining signatures prepared which he proposes to send to every State in the Union; they are not for the exclusive use of drummers, however. The first is a petition for a local organization the is as follows:

We, the undersigned apothecaries, favor the formation of an association of retail apothecaries, for this city or county, to form a branch of the Interstate Retail Druggists' League, and will do what we can to make it a success.

The following blank is to be signed with the above, and forwarded to President Canning:

We, the undersigned apothecaries, believing the League plan is a practical method for the maintenance of fair and legitimate prices, hereby petition the makers of proprietary goods to adopt that method of selling their preparations, and we agree not to sell directly or indirectly, products, the makers of which agree to adopt the League plan, at less than the prices recommended by the "Apothecaries' Association" of this vicinity.

In brief, the League plan requests proprietors to sell their goods to the jobbing drug trade only, requiring the jobbers to sell to retailers at uniform prices, regardless of quantity.

This agreement to take effect when 80 per cent. of the retail apothecaries of this vicinity have signed this agreement, and adopted a schedule of prices.

EXTRACT FROM DETAILS OF LEAGUE PLAN.

We, manufacturers, desire to have retail dealers fully protected in obtaining the regular prices, and all selling agents will refuse to supply all recognized and voluntary cutters of prices of any proprietary articles, whether wholesale or retail dealers.

Furthermore, whenever the retail trade of any city, town or county, have organized a league or Association, embracing 80 per cent. of such dealers located in such city, town or county, and have established a schedule at which proprietary articles shall be sold by its members, and such facts shall be reported to you, either by such organization or by the undersigned, then you shall not supply our goods to any dealer in such city, town or county, who sells proprietary articles in violation of such schedule so established, except at full retail prices.

Before closing, mention should be made of the self sacrificing work which is being given to this movement by our eastern men. Some of the principal workers, both in the League and in the Guild, would be least benefited by the success of this effort, as the personal business of those alluded to is confined, more particularly, to other lines than the handling of patents.

"Well bought is half sold." Read the "trade notes" and market review every week

Boston.

A meeting of retailers interested in the formation of the "New England Retail Druggists' Union" was held in Garfield Hall, Boston, on the afternoon of March 16. The meeting was called to consider the report of the committee on nomination of officers and by-laws. J. Allen Rice, president M. P. A., was elected temporary chairman, and then the following officers were elected in accordance with the committee's report: President, Geo. W. Cobb of East Boston; vice-presidents, Charles H. Hyde, Rutland, Vt.; A. S. Wetherell, Exeter, N. H.; James O'Hare, Providence, R. I.; James Duggan, Norwich, Conn.; D. W. Hazeltine, Portland, Me., and Wm. C. Durkee, Boston, Mass; secretary, C. P. Flynn, Boston; treasurer, Frank M. Harris, Worcester. After President Cobb took the chair Wm. C Durkee read the report of the committee on constitution and by-laws, which was approved after some minor changes. The object of this union is to aid in the formation of local branches of the Interstate League, and a subscription was started at this meeting to provide the sinews of war.

Those eligible for membership are the presidents, vice-presidents, secretaries and treasurers of local bodies, county executive officers and the executive officers of the Interstate League.

Among those present were: Albert O. Hull, Central Falls, R. I.; E. K. Gridley, Pawtucket, R. I.; James Duggan, Norwich, Conn., and G. F. Soule, Manchester, N. H. Massachusetts pharmacists noticed were: James H. Manning, Pittsfield; Thomas B. Nichols, Salem; G. C. Brock; Lowell; J. Allen Rice, Milford; A. R. Bayley and F. W. Reeves, Cambridge, H. S. Garcelon, Somerville; G. W. Cobb, Newton; and N. W. Styles, C. P. Flynn, Reuben L. Richardson, Fred L. Carter and John W. O'Mealey, all of Boston.

Secretary F. W. Reeves of the Apothecaries' Guild of Boston and vicinity has been doing some missionary work in Cambridge and Somerville, and as a result has secured the signature of every druggist in these cities to the plan of the Interstate League. A meeting of these signers was held in Raymond Hall, Cambridgeport, on the afternoon of March 15, at which an organization was completed to be known as the Cambridge and Somerville Druggists' Association. Following a collation a business meeting was held, at which the following officers were elected:

President, Dr. A. R. Bayley, Cambridge; vice-president, Charles H. Crane, Somerville; treasurer, W. R. Achison, Cambridge; secretary, Fred. W. Reeves, Cambridge; directors, Messrs. J. H. Hubbard, George H. Cowdin, Albert E. Lynch, E. H. La Pierre and H. S. Garcelon.

A committee on by-laws and schedule of prices was appointed. It is expected that the prices will be as follows: 85 cents for $1 articles and full prices for 50 and 25 cent goods, with possibly a few exceptions.

A social gathering of the members of the Alumni Association of the Massachusetts College of Pharmacy with lady friends took place at the college building on the evening of March 13. The evening was passed in social conversation and in listening to a musical entertainment, which had been provided by the officers of the association. Music was furnished by "Caswell's Pharmaceutical Orchestra," and there was singing by Miss Alice Clark and Mrs. and Miss Denton of Wellesley. President Tailby has completed arrangements for another meeting of the A. A. for March 28, when the Rev. Mr. Benner, of Wellesley will deliver a lecture upon the Yellowstone National Park, which will be illustrated by stereopticon views.

Charles H Bassett, Ph.G., 169 Tremont street, doing business under the name of Joseph T. Brown & Co., is financially embarrassed. Emery Grover has been appointed assignee and at a recent meeting of the creditors he gave out a statement showing the debts to be $18,571.21, and the assets were estimated at $13,352.73. No offer was made at this meeting, and Mr. Bassett was given time to make one.

A movement is in progress which will soon crystallize in the formation of an association of Berkshire County, Mass., druggists. Haverhill pharmacists are becoming interested in local organization. Geo. W. Cobb has visited Pittsfield and Haverhill recently and he is largely instrumental in interesting the craft in these cities in the league movement.

Isaac E. Emerson.

The subject of this sketch, whose picture above will be readily recognized by a large number of very warm friends, is Mr. Isaac E. Emerson, president of the Emerson Drug Company, Baltimore, Md., the proprietors of Bromo-Seltzer, who was born at Chapel Hill, N. C., in 1855. He was educated at the University of North Carolina and after his graduation he acted as assistant demonstrator in the chemical laboratory of his college for two years. Then came to Baltimore, where he entered upon his career as a retail druggist and his practical experience in this line led him to the compounding of the celebrated remedy referred to.

While Mr. Emerson gives the strict attention of a shrewd and energetic man to his affairs he finds time for diversion from the stress as a member of the Athenæum and Pimlico driving clubs. He is also the owner of a four-in-hand tally-ho and of the gunning yacht "Susquehanna," anchored near Havre de Grace in the vicinity of the Maryland ducking shores, where he frequently entertains his friends.

Mr. Emerson is known among his associates as a liberal minded, open-handed good fellow, and in all his social relations in the city of his success his acquaintance is sought after and his friendship highly valued. [For this sketch and illustration we are indebted to *The Club*.]

New York.

The engagement is announced of Geo. B. Luks, the well known artist of *Truth*, to Miss Vorrath, and Mr. Luks is receiving the congratulations of his many friends in the drug trade, where he is deservedly popular. Mr. Luks is a son of E. C. Luks, the pharmacist of Royersford, Pa., and received his training in early life as a pharmacist in his father's store. His artistic inclinations were so marked, however, that he was sent abroad to study art and his brilliant success as an artist and illustrator shows this to have been a wise

move. An interesting feature of his work is that his large cartoons almost always convey a sermon at the same time that they amuse. Mr. Luks is a contributor to this journal, and now has in preparation an article on pharmacy in the Azores whence he has quite recently returned after securing many valuable sketches and studies of that out-of-the-way corner of the world.

William M. Townley, a prominent wholesale druggist of Newark, died on Saturday night at his home, No. 77 Pennsylvania avenue, Newark, of pneumonia. He was fifty-three years old, and leaves a widow, one son, and one daughter. Mr. Townley was the head of the Townley Drug Co. and of the Paas Egg Dye Co. of Newark. He always took an active interest in the New Jersey Association, of which he was the treasurer.

A. Ashfield Baker Co. is the name of the corporation which succeeds A. Ashfield Baker as manufacturer and dealer in druggists' sundries and novelties. The officers of the company are A. Ashfield Baker, president; F. M. Munn, vice-president, and W. A. Robbins, treasurer. The offices of the company are located in this city at 140 William street, while their factory is at East Orange, N. J.

Tilden & Co. of New Lebanon have added Arthur Lewis, formerly with the Russell Morgan Co., and J. R. Allen of Abbey's Theater Pharmacy to their New York force under Otway Latham, manager of the New York office. Mr. Lewis will attend to the city trade while Mr. Allen will take a part of Brooklyn as his special territory.

At the last examination of the New York Board, held on March 12, the following passed: Adolph S. Katzman, L. B. Wade, Chas. T. Webster, Paul Link, Chas. Stœrzer, Jr., Rich. Gruenwald. During the month 19 pharmacists were registered. The next examination will be held on April 9.

The many friends of Dr. R. G. Eccles, Brooklyn, will be pleased to learn that he has been successful in his efforts to prevent the opening of a saloon near the pharmacy of his wife, Mrs. Mary Eccles. The Commissioners of Excise met last Friday and refused to license the premises.

T. P. R. Loud, who has been with the firm of Merck & Co. for some years past, goes on the road for that firm, leaving his city desk to John Queeny. Mr. Loud is an old traveler and well known all over the United States, while Mr. Queeny is also a very popular and well-known salesman.

L. E. Feindt of South Orange has moved into his new store at the corner of Vose avenue and South Orange avenue. The fixtures, which are a highly artistic piece of work, were made by Wick, formerly Hubbard & Wick of Tenth avenue and Twenty-sixth street, New York.

C. F. Boehringer & Soehne, the widely known manufacturing chemists, are announced as a recent acquisition to the membership list of the Drug Trade Section of the New York Board of Trade and Transportation.

The New York Quinine and Chemical Co. have made a valuable acquisition to their force in the person of Thos. Cook, who is one of the most popular, successful and widely known men in the fine chemicals trade.

J. Alex. Whittal, formerly of Eighth avenue, returned recently from Sebastopol Cal., where he has been on a visit for the past 18 months, and has taken a position at Mrs. Griffin's pharmacy in South Orange, N. J.

M. C. McGrath, the well-known salesman, is now associated with the sundries department of Tarrant & Co.

T. J. Macmahan was the "feeble instrument," as he himself expressed it, that brought out an unusually large attendance of members at the annual meeting of the College of Pharmacy of the city of New York, held in the old college building, 209 East 23d street, on Tuesday evening, March 20. Ex-president Ewen McIntyre was there looking as fresh and as youthful as it is possible for a man of his advanced years to look. For two of the oldest members present this was stated to be the first occasion on which they had set foot within the college building; so it was evident there was a stiff contest on. The election of officers and trustees resulted in the scratching of the official ticket and placing on the list of trustees to serve three years the name of T. J. Macmahan. Stated in detail the balloting resulted as follows: Total number of votes cast, 90; president, Samuel W. Fairchild, 90; vice-presidents, Charles F. Chandler, 79; George Massey, 86; John R. Caswell, 89; treasurer, Horatio N. Fraser, 74; secretary, J. Niven Hegeman, 90; trustees to serve three years: Hermon W. Atwood, 88; Charles Osmun, 42; Gustavus Ramsperger, 87; Charles Rice, 90; George B. Wray, 83; T. J. Macmahan 53. Only five trustees were elected.

After adjournment the members repaired to Delmonico's where a reception, tendered by Edward Kemp of Lanman & Kemp, was held. This proved in every respect a most enjoyable affair. The host, who is an old and honored member of the college, was toasted in a clever speech by President Fairchild. In responding, Mr. Kemp referred to the pleasure which it afforded him to meet so many old friends. He took his listeners back with him some 30 or 40 years to the time when Rushton, the elder Hegeman and Thomas Green were in business, and told a most amusing story of Mr. Green's ability as a concocter of egg-nog. In speaking of the college, he pictured the success which must follow the well directed efforts of its officers and trustees, and alluded to the benefits of education. Men of brain who could prove their right to positions of responsibility and trust were sure of retaining them; and speaking of his own firm, he said "the man who earns his epaulettes in the establishment of Lanman & Kemp wears them." Others who spoke were Ewen McIntyre, Wm. M. Massey, T. J. Macmahan, H. Graeser and Fred. Hoenthal.

"Well bought is half sold." Read the "trade notes" and market review every week.

Interstate Retail Druggists' League.

The regular meeting of the New York City branch of the Interstate Retail Druggists' League was held in the Mott Memorial Hall, 64 Madison avenue, on March 16, at 3 P.M. President Osmun presided and there was a fair attendance of members. Secretary Morrison read letters from the following named firms who have agreed to co-operate with the League in securing signatures to the circular petition issued recently:

C. N. Crittenton Co., R. W. Robinson & Son, Lehn & Fink, W. H. Schieffelin & Co, and Tarrant & Co.

W. H. Ebbitt of W. H. Schieffelin & Co. sent a letter inclosing a list of names and assuring the League of his hearty co-operation and support in the good work.

M. F. Bender, the efficient treasurer of the organization, made a report in which he stated his experience with several prominent pharmacists who are not members of the League and whom he had endeavored to win over to League principles. All had expressed their sympathy with the objects of the local branch, and declared to him their willingness to aid in the good work in every way possible. It was elicited at this point that over five-eighths of the entire retail drug trade of the city had already subscribed to the petition of the League indorsing the Detroit plan. A communication from Henry Canning of Boston was read in which he expressed the conviction that if each member of the League could be brought to realize that the success of the organization depended upon himself, upon his punctual attendance at meetings and his individual efforts to interest brother druggists, the future of the League could be safely predicated—success would be assured. A letter of V. Kostka of the New York state executive was read by the treasurer. In this letter Mr. Kostka announced his intention of resigning his position as executive officer; but as this was a matter which concerned the parent body no action was taken.

Mr. Osmun spoke of the Nixon bill now before the Assembly in which it is proposed to increase the druggists' excise license from $20 to $50. The Saxton bill also came in for comment.

A. C. Searles, formerly of Brooklyn and now of New York, who was present, said he was pleased to note the turn which the discussion had taken and was convinced that nothing could contribute so much to the future success of the branch as honest endeavors on the part of its members to secure equitable legislation for the druggists of the whole state. He expressed it as his opinion, however, that it would be best to communicate with the committee of legislation of the State Pharmaceutical Association before taking definite action.

The officers were instructed to communicate with the committee on legislation of the State Pharmaceutical Association with reference to pending legislation. Mr. Reuter took occasion at this point to remind those present of the benefits which had been derived in the past from concerted and organized action by the retail pharmacists of New York; the privilege of exemption from jury duty being especially dwelt upon.

Before the matter adjourned a vote of thanks was on motion of the secretary tendered to THE AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD for "the encouraging support which the paper has given to the efforts of the New York City branch to promote organization among the druggists of New York City."

Mr. Keenan responded for the paper, saying that the publishers were always happy to do anything likely to promote the interests of the retail trade, these being "The things we stand for." He was glad to observe that the paper enjoyed the entire confidence of the members, and this privilege he said it would be his duty to respect.

The meeting was then adjourned to the first Friday in April, when a large attendance is looked for. The especial subject of discussion will be pending legislation.

A congress of chemistry and pharmacy will be held in Naples at the beginning of next September. The congress will be divided into two sections—the one scientific, the other professional.

Kings County Pharmaceutical Society.

After opening of the regular meeting for March on Wednesday afternoon the 13th and election of two new members, Messrs. Clarence O. Douden and Stephen L. Wood, President A. H. Brundage gave notice that the regular order would be suspended while a paper was read by Professor Aug. Drescher of Newark, giving a sketch of work recently done by himself in examination for

SALICYLIC ACID IN VIOLA TRICOLOR.

Prof. Drescher said that violas had long been known as having antiseptic properties. In Germany panzy is in common use as infusion and poultice for dressing wounds and bruises; consequently salicylic acid had been suspected, but not before isolated *as free* acid. Those who had before tried it claimed it to be present as sodium or potassium salt; one or two held that it was obtained by breaking down a glucoside present. He had obtained it *alone* by most simple methods, not from a glucoside, though such was present.

LOCAL ORGANIZATION.

Edward Alt gave an interesting statement of the proved value arising from permanent and agressive organization as carried out in a good sized town close by the city of New York, always considered as about the worst location possible for such work. Yet the druggists there for a number of years had received pecuniary benefit and increased backbone as well as much social pleasure from working together for a common end.

INTERSTATE LEAGUE.

R. C. Werner reported in detail the progress of the local work upon Interstate League matters. Many had given their signatures to the League agreement, and few found any serious objections. He offered to meet any inquiries or questions for those present as yet unfamiliar with the work, of which a number were asked and all were explained.

TELEPHONE MATTERS.

Mr. France reported as chairman of the telephone committee recommending that the society give its active support toward the passage of the Gunt Telephone bill, an outline of which was published in THE DRUGGIST AND RECORD for March 1, page 110. The bill was indorsed and the regular legislative committee increased to six and sent up to Albany to aid in securing the passage of the bill.

Class Notes.

We would be pleased to hear regularly from every class in the Colleges of Pharmacy in the United States.

Class of '94 Buffalo College of Pharmacy.

We had our class election in February, choosing the following officers: President, O. S. Salisbury; vice-president, Geo. H. Jones; secretary, Chas. St. John; treasurer, Guy L. McCutcheon; valedictorian, Archie I. Drake, M.D.; historian, Chas. E. Noble; poet, Orange A. Green; marshal, George A. Heiser.

We can boast of one thing, that is, our class colors, they are orange and green, named in honor of our poet, Orange A. Green.

The class as a whole is doing good work.

We have a lady in our class, Miss Cora Smith from Cleveland, Ohio, and she is doing good work.

We have a very fine Greek-letter society in connection with the college, the Beta Phi Sigma, and an excellent one of its kind.

The fifth annual class banquet was held at the Genesee, fifty members being present including the faculty. Charles St. John acted as toast master, introducing the following speakers: "Our Instructors," Guy L. McCutcheon; "Juniors, Seniors and Graduates," Dr. Gregory; "Ladies as Pharmacists," Orange A. Green; "Class of '95," L. A. Corning; "Banquet," Dr. H. M. Hill; "Where are we at," C. H. Caulkins; "Our Motto." O. S. Salisbury; "Difficulties of the State Board." C. Richards.

Dr. Vandenbergh was present and was received with an ovation. The banquet hall was very beautifully decorated in flowers and evergreens.

CHARLES ST. JOHN.
Class Correspondent.

Senior Class University of Kansas.

Our class this year outnumbers any that has ever preceded it. We now have 23 regular students, of which two are ladies.

The officers of the class of '94 are Harry Fox of Atchison, president; Miss May Chappin of Leavenworth, vice-president; Perry B Barber of Lawrence, secretary and treasurer.

We have a pharmaceutical association made up of students of the junior and senior classes, which meets every other Friday afternoon for the discussion of topics and questions out of the regular course of lectures in pharmacy and materia medica.

Our school is recognized to a greater extent each year by the people of our State and neighboring States and we hope to have a bill passed in the next legislature for the erection of a pharmacy building at the Kansas State University. We are very much crowded in our laboratories at present.

The arrangements for commencement have not yet been perfected, but the faculty are thinking of inviting a speaker from some neighboring college, and this, with an orator and an essayist from the class, will probably compose our commencement exercises.

PERRY B. BARBER.
Class Correspondent.

Senior Class; University of Minnesota.

The eight-months laboratory course in pharmacy is divided into three terms; the third term began March 1 and will continue until June. One of the leading features of this term is the continuations of the course in organic chemistry, which occupies eight hours weekly. It consists of practical and theoretical work.

The special course in bacteriology which began February 1 is proving very interesting and valuable; it will be continued to June. The object of this course is to extend the pharmacist's usefulness to the doctor.

The course in quantitative chemistry which began last fall will be continued to the 1st of June. There are 10 hours' work every week in this course.

A. B. Hart, member of the '94 class, was absent from the class the past week owing to illness. He is fully restored and at work again.

Preparations are being made and class meetings held frequently concerning commencement, which takes place June 7.

The lady member of the class, Miss Blanchard, is equal to her undertaking and is keeping up with the progress of the class very creditably.

Dean Wulling is fully restored from his late illness, and as usual is hard at work in the interest of the students.

Arthur Von Rohr was unanimously elected class reporter at the late class meeting. ARTHUR VON ROHR.
Class Correspondent.

Junior Class Notes, University of Minnesota.

Messrs. Sanderson, Slate, and W. H. Root, specials, are doing work with the class.

I. C. Olsen enjoys bi weekly visits to his home at St. Croix Falls, Wis.

Miss Alice Houlton, the only lady member of the class, was one of the charter members of the Theta chapter of the Phi-Delta society recently organized in the University.

Theodore Cook has been obliged to give up his work at the college, and return to his home at Prescott, Wis., on account of ill-health. His absence is much regretted by classmates and instructors.

The members of the class have decided to have their photographs inserted in the *Gopher*, the annual publication issued by the Juniors of the University. They will also be represented in it by a class history.

A class party is talked of. It is to be hoped that it will materialize.

The members of the class met March 8, and elected officers for the remainder of the year, as follows: President, A. H. Hillard; vice-president, G. W. Iltis; secretary, D. E Farmer; treasurer, R. T. Burke.

The botany class reports very favorably of the work under Instructor C. A. Ballard. Bastin's College Botany is used as text book, and microscopic work is given in connection with it. The course covers a period of about twenty weeks.

In the pharmacal laboratory, under Dean F. J. Wulling, the subject of percolation, and the preparation of official tinctures, has just been taken up. Most of the other fundamental operations of pharmacy have been treated of in a systematic and thorough manner. As the work progresses, interest increases.

CHAS. L. CHAPPLE.
Class Correspondent.

An Agreeable Nutrient Tonic.

Dr. C. A. Ewald, senior physician to the Kaiserin Victoria Hospital, Berlin, in writing on the subject of predigested foods, says:

That preparations containing much albumose are most valuable for nutrition has been proved not only by experience gathered at the sick bed, but also by J. Munk's experiments on the exchange of substance carried out on animals with a preparation consisting mainly of albumose. Real advantage, however, can only be expected from any of these preparations, and therein lies the insufficiency of experiments on animals with preparations of this kind—if they have a taste acceptable to the human palate for a long time running.

This consideration induced us to try a preparation brought out by the brewing firm of L. Ross & Co. under the guidance of the well-known Dr. Friedr. Witte of Rostock.

This peptonized beer (Kraft bier) is brown and strong with good froth and pleasant taste, something like Stout with a bitter bytaste.

Analyzed in the manner of Kjeldahl-Argutinsky, the beer contains 0.610 per cent. of nitrogen in the shape of albumose, or a bottle of 25 centiliters of beer 1.525 grms. nitrogen, equal to 9.53 grms. albumose or 43 grms. of meat.

The beer was administered to invalids and convalescents in the hospital and in private treatment, and taken by them for weeks, in two cases throughout the whole summer. Without any exception it agreed well with the patients, and what deserves to be specially mentioned, it never called forth diarrhœa.

Some patients stated that their appetite was decidedly better while taking the beer than either before or after

The "Konseal."

The great advance that has been made during the past few years in synthetic remedies has helped to bring "Konseals" into greater prominence. The desirability of getting the effect from several of the newer remedies, rapidly, has created a need for this simple method of prescribing, and it is not surprising, therefore, that prescriptions of medicinal powders in "Konseals" are rapidly gaining favor with the medical profession. The essential qualities of a perfect vehicle for powdered drugs are: convenience of form, elasticity, tastelessness, ready solubility, and easy digestibility. These qualities are possessed in a very marked degree by the "Konseal;" and the advantages possessed

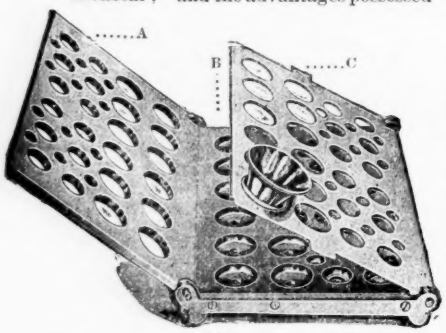


Fig. 1.

by this method over loose powders or pills are:

(1.) Drugs or medicines are rendered perfectly tasteless.

(2.) The ingredients are not compressed into a hard and almost insoluble mass by the aid of an excipient.

(3.) A much greater freedom in prescribing is possible.

(4.) After dipping in water, the solubility of the coating and its great flexibility render them very easy to swallow.

(5.) The personal responsibility of the dispensing chemist insures the purity of the drugs employed, a fact not to be overlooked.

(6.) Prescriptions when put up in "Kon-

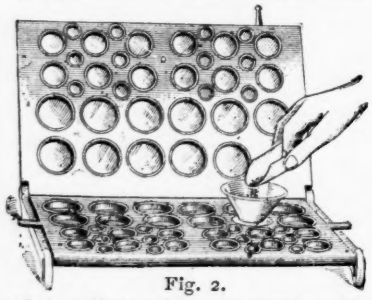


Fig. 2.

seals" are dispensed in an extremely quick, neat and cleanly manner, and present a most elegant appearance.

(7.) None of the medicine is wasted, as often happens when powders are used.

The filling and closing apparatus consists of three nickeled plates, the manipulation of which is extremely simple, as may be seen by carefully following the instructions.

The "Konseals" are pressed with the fingers into the inner spaces of plates A and B. (See Fig. 1)

Plate C is then folded over on to plate B, and the powders poured into the "Konseals" which have been placed in plate B. Large doses are more easily manipulated by means of the funnel and pressed down with the thimble furnished for the purpose.

When the "Konseals" are all filled, plate C, is removed from plate B, and the damping roller (not too wet) passed over the "Konseals" in plate A (see Fig. 2), which plate is then closed over plate B. A slight pressure closes all the "Konseals," which on opening the apparatus are found adhering to plate A. They are easily pushed out by the fingers, or with the thimbles supplied for this purpose.

That this apparatus stands the test of practical use is amply demonstrated by the testimonials published on page 25 of this issue. For fuller details, free samples and prices write the sole agents for America, J. M. Grosvenor & Co., 103 Milk street, Boston, mentioning this journal.

Croton Oil as a Rubefacient.

Connolly's croton oil plaster offers a means of applying this excellent rubefacient in a manner which permits of its action being definitely determined both as to extent and severity. The value of croton oil has long been conceded, but the difficulty of accurately graduating its action to just the desired degree and the trouble involved in applying it have militated against its use. These difficulties have been overcome in Connolly's croton oil plaster, descriptive circulars of which can be obtained by addressing the Joel A. Connolly Plaster Co., Boston, Mass. They offer special inducements to druggists to introduce these plasters.

Dabrooks Perfumes.

We wish to call your attention to the special offer of Williams, Davis, Brooks & Co. of Detroit, manufacturers and proprietors of Dabrooks' perfumes, which will appear in our next issue. Their line of perfumes, though on the market only comparatively a short time, has, by the quality and style of package, forged its way to the front, wherever they have been introduced. They are put on the market by an exceptionally enterprising firm, and any product from their laboratory is a guaranty of the highest quality attainable.

The accompanying cut represents their style of bottle, which is used from one-half to eight ounce. All bottles made to hold full measure. They put out a full line of staple odors at $3 per pint in eight ounce G. S. bottles. Several special concentrated odors at $4 per pint a complete line of bottle goods. The discounts offered on these goods in quantity are, very liberal, considering the high standard of quality. Enterprising druggists who want to handle a fine line of perfumes sold *only to the drug trade*, should not fail to write for their complete illustrated price list.

Read the "trade notes" and the market review every week if you want to keep posted.

Changes in Jobbing Prices.

The changes which have occurred during the past month in the quotations of the prices at which retailers can buy drugs and chemicals in ordinary lots are referred to in the following paragraphs:

ACETANILID is easier and is now quoted 40 @ 55c.

CITRIC ACID is a little weaker at 44 @ 48c.

CAMPHOR has declined, and is now quoted 42 @ 48c.

GUM ARABIC prices have been revised as follows: First picked, 55 @ 60c.; powdered, 65 @ 70c.; second picked, 40 @ 45c.; powdered, 45 @ 50c. This is a decline of 5 to 15c.

COD LIVER OIL, Norwegian, has advanced materially in the interval and barrels are now quoted $30.

OIL OF LEMON is lower, and we quote the range at $1.60 @ $1.75.

OIL OF PENNYROYAL has declined to $1.40 @ $1.75.

PIPERAZINE pure, in tubes is marked up 5cc., being now quoted $1.50. Ounce bottles are higher at $4.25.

RESORCIN, white, can now be obtained down to 25c., the range being 25 @ 30c.

IPECAC ROOT is lower owing to new arrivals, and is now quoted $1.60 @ $1.75 for whole and $1.75 @ $2 for powdered.

LOVAGE ROOT is higher and firm at 75 @ 85c.

ORRIS ROOT in fingers has advanced and is now quoted $1.50 @ $1.75.

CANARY SEED is firm with 6c. quoted as an outside figure.

CELERY SEED has advanced to 20 @ 25c. and is firm at these figures.

POPPY SEED, blue, is firmer but does not change from 12 @ 15c.

QUINCE SEED is lower, and is now quoted 45 @ 50c. for German.

STROPHANTHUS SEEDS have declined materially since our last report, $1 @ $1.25 now representing the quoted range.

SEIDLITZ MIXTURE has declined in sympathy with the raw material, and can be obtained at 18 @ 20c.

TETRANOL is out of market.

Reduction in Price of Piperazin.

Messrs. Lehn & Fink have issued the following to the trade:

We have much pleasure in announcing that we are now enabled to reduce the price on piperazin Schering, and have this day reduced the same just one-half; that is to say, while retaining the same schedule of selling prices as heretofore, we furnish double the quantity in each vial; 10 grammes now instead of five grammes as heretofore.

Please note following scale of prices of piperazin-Schering, in 10 gramme vials, in single vials, per vial, $1.50; in lots of 30 vials, per vial, $1.35; in lots of 60 vials, per vial, $1.25.

We also furnish piperazin-Schering in compressed tablet form, each tablet consisting of 1 gramme of the drug without admixture, 10 tablets in a tube. Price per tube, $1.50; larger quantities at same schedule of prices as above.

NOTE.—We continue to furnish piperazin in 10 gramme vials partly for the advantage in dispensing and partly because the metric system of weights is now official in accordance with the new United States Pharmacopœia. For convenience of comparison between gramme and ounce packages please note that 1 oz. piperazin-Schering, in original 10 gramme vials, would cost about $3.50 in 60 vial lots, and proportionately more in smaller quantities.

PIPERAZIN WATER, SCHERING'S.

Put up in cases containing two dozen bottles. Quart bottles per dozen, $5; in 1 gross lots, $60 less 10 per cent.

To Manufacturing Pharmacists:

It gives us great pleasure to announce that the new issue of the United States Pharmacopœia (just out of press) has substantially given official sanction to the Pepsin test as adopted by us January 4, 1893. The method of the revised United States Pharmacopœia is almost in every detail literally our own, and we, therefore, occupy the unique position of being (without doubt) the only manufacturers in the world using a Pepsin test, not only consistent as to practical manipulation, but representing more nearly than any other the exact amount of acid found in the gastric juice of a healthy human stomach. Heretofore our method has been ignored, sneered at and controverted. We have been ridiculed as "pork packers," etc., our endeavors to establish a scientific test treated as presumptuous. Happy are we now to know that we alone have been using the test now made official. The following is a synopsis of the methods that have been most commonly used:

	U. S. P., 1880	F. B. & F.	P. D. & Co.	Nat. For.	Cudahy	U. S. P., 1890
Albumen	10.0	10.0	10.0	10.0	10.0	10.0
Acid 32%	1.5	0.464	0.938	0.500	0.625	0.625
Water	100 cc.	ab. 36 cc.	100 cc.	100 cc.	100 cc.	100 cc.
Time	5 to 6 hours	6 hours	6 hours	1 hour	6 hours	6 hours
Temperature	100° to 104°	104°	104°	125°	100° to 104°	100° to 104°

We have always held that a method should be adopted which used the same amount of acid as is found in the gastric juice, and which should, with proper manipulation, develop the highest proteolytic power. Roberts, in his "Digestion and Diet," on page 130, shows that 0.2% acid gives the best results, while if more or less is used the activity of the ferment is decreased. When we, fully a year ago, commenced to use 0.2% acid in Pepsin tests, while we were satisfied it would in time be recognized as the correct amount, yet we were as certain that our action would be misunderstood and derided as has been the case.

Our facilities for producing digestive ferments are unusually large. Our supply of stomachs is equal to, if not superior to, that of any other producer. We are able to deliver the stomachs to our laboratory within half an hour after the killing. They have been placed on ice in the mean time, consequently there is no such opportunity for septic contamination as if the stomachs had been shipped long distances and treated to arrest decomposition.

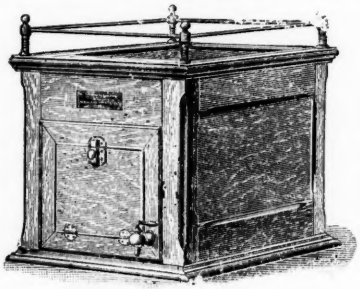
We are producing almost every grade of Pepsin from 1/1,000 to 1/10,000, whether for manufacturing purposes or for dispensing uses. Our REX BRAND, particularly, is of high grade, soluble, non-hygroscopic and almost entirely free from Peptone. We shall be very glad to quote you our Pepsin in bottles or in bulk at favorable prices, if you will state your wants. Pancreatin we are also large producers of, as also Beef Extract, Beef Peptone, Wine of Peptone, Ox Gall, Blood Albumen, etc., etc.

Yours truly,

THE CUDAHY PHARMACEUTICAL CO.

New York Branch, 57 North Moore Street. **South Omaha, Nebraska.**

ICE CREAM CABINET.



The Ice Cream Soda Business Robbed of all its Terrors.

[Patented, March 10, 1890.]

The above cut represents our **Ice Cream Cabinet,** which is especially adapted for Soda Fountains, for serving Ice Cream Soda. The Cabinet is a handsome article of furniture; capacity about six quarts; selected ash or oak, finely finished, with nickel trimmings and faucet, ornamented posts, and nickel rods on cover. The drawer containing the Ice Cream is of tin, which runs into a chute made of galvanized iron of which the lining of the Cabinet is also made, thus preventing the ice or salt coming in contact with the receptacle holding the Ice Cream.

The Cabinet requires packing with ice and salt only once a day, keeping the Cream in good condition. It is thoroughly practical, avoiding any sloppy or wet surroundings.

Kept on end of counter or side of the fountain, it will be found something of an advertisement in its novelty.

Send for Catalogue of Soda Fountains, Necessities, etc.

No. 1, outside dimensions, not including faucet or rail, 15x15x21 in., **$15.00 net.**

MANUFACTURED BY

FOX, FULTZ & WEBSTER,

No. 52 Park Place, New York. ✣ **18 Blackstone Street, Boston, Mass.**

PHYSICIANS SAY "THERE IS NO INJECTION OF AIR WITH THE ALPHA AND THE OMEGA SYRINGES

ADVANTAGES. ∴

The "ALPHA" and the "OMEGA" SYRINGES are perfectly simple in construction.

They have no more parts than the old style or ordinary Syringes.

They entirely obviate the intermittent, and in many cases, painful action of Pump Syringes.

They absolutely prevent the admission and consequent dangerous injection of air, so common with all intermittent or old style Syringes.

Unlike all Fountain, Rubber Bag or Pump Syringes the flow is not only continuous, but can be made either *gentle* or *strong* at the will of the user, the pressure of the thumb and forefinger being sufficient to produce a full stream.

The steady flow can be increased, lessened or stopped at will.

The continuous flow of the injecting fluid through the nozzle while the Syringe is in use *prevents the focalized fluids from being drawn back into the rubber bulb and tube, which often happens in the use of intermittent Syringes, rendering them offensive.*

F. O. B. New York, or freight prepaid east of Missouri River on $100 lots; 30 days cash, or 1 per cent. discount for cash in 10 days.

EXCHANGE.

In order to promptly retire the five gramme vials of piperazin-Schering, we ask you to kindly send us at once an order for 30 or 60 vials of the new 10 gramme vials, and on receipt of new stock to return whatever you have on hand of the old style packages; we will bill the new order at schedule rates, and when the returned stock is received will credit your account at the same rate with the number of vials returned.

This is practically an exchange, and above plan is adopted as most convenient and expedient. *We cannot consent to an exchange or to allowances on any other basis.*

We hope to receive your order for desired new stock at once. Remember, we are advertising piperazin continuously; the demand is increasing constantly, and with reduced prices—the only barrier heretofore to greater popularity—the remedy is bound to take its place as a staple. You can safely order the quantity to get best price; we guarantee the sale.

The above offer must be accepted promptly. We hold it open *until April 1, 1894*; after that date no further reclamations will be allowed. LEHN & FINK.

Review of the Wholesale Market.

NEW YORK, March 21, 1894.

It should be understood that the prices quoted in this report are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a wide range of prices.

The month thus far has not proved a very busy one among importers and dealers in drugs, dyestuffs and chemicals, and trade may be said to continue light in all departments. The jobbing houses report a moderate amount of business doing in broken packages, purchases in a large way being an exception. Regarding prices, the tendency upon general goods is to greater firmness, though in reviewing the changes of the week the fluctuations are found to be pretty equally divided between higher and lower values. Opium is again a shade lower. Cod liver oil is firm at an advance Naphthaline is easier. Cacao butter is meeting with increased attention. Balsam Peru is firmer. New crop jalap is in improved demand and firm. Quinine quiet and steady.

ADVANCED.	DECLINED.
Cod liver oil.	Celery oil.
Cloves.	Oil of peppermint.
Ipecac root.	Opium.
Orris root, fingers.	Orange oil.
Balsam Peru	Quicksilver.
Damiana leaves.	

DRUGS.

ALCOHOL continues firm at the Trust range of $2.24 @ $2.28 less the usual seven cents per gallon rebate. From the hands of outside producers $2 @ $2.02½ net is quoted.

BALSAMS COPAIBA, Fir, and Tolu are without important change. A parcel of 20 cases Maracaibo balsam copaiba, which arrived a few days ago, is held at 36c. by the importer. There is little inquiry at the moment. Peru is scarce and quoted at $1.60 inside.

BARKS.—Cascara Sagrada in limited quantities can be obtained at 5c., though for round parcels an advance upon this price is asked. Cascarilla is in improved jobbing demand, and we hear of numerous small sales at 7 @ 9c. for ordinary and sifted respectively. Soap is maintained with some show of firmness at the previous range; advices from the Hamburg market indicate increased firmness, but values here are unchanged. We quote the range at 3¾ @ 4c.

BUCHU LEAVES, short, continue in moderate demand, with jobbing sales within the range of 10 @ 12c.

CANTHARIDES remain quiet, though holders are firm in their views, Chinese offering at 28 @ 30c., and Russian 65 @ 77½c. for whole and powdered as to quality and quantity.

CACAO BUTTER is in good demand, especially foreign bulk, which has sold freely during the interval at 32c. spot and 31½ to arrive.

CASTOR OIL is without improvement. Jobbing sales are making at 14½ @ 15c. for barrels, and 15 @ 15½c. for cases.

CASSIA BUDS are inquired for, but the small available quantity and firm prices restrict trade. The market is well sustained at 18 @ 18½c.

COD LIVER OIL, Norwegian is seasonably active, and the market is firm in tone at an advance over the quotations of the previous week. The stock here is not large and orders for quantities over five barrels will not be filled by local holders except at an advance on the market quotation of $25. The fact that the import cost from primary sources is above the quotations of this market makes holders indifferent sellers, a further appreciation being looked for.

COLOCYNTH APPLES, Spanish, are a shade lower with sellers at 19 @ 24c. the inside price for full packages; but the article at the moment is neglected and the market is quiet.

CUBEB BERRIES are very slow of sale and prices are unchanged at the previous range.

CUTTLE BONE, Trieste, continues in good demand for purposes of consumption at the present low range of 9 @ 10½c.

DAMIANA LEAVES have sold at 11c. recently, but 12½c. is now asked for spot and 12c. for future delivery.

ERGOT is without new feature of interest; supplies are obtainable at the quoted range.

GLYCERIN is dull and unsettled. The nominal quotations for drums is 12c. and barrels 12½c, but these figures can be shaded.

MENTHOL, Japanese, continues scarce and the small available supply is held firmly at $5.

MORPHINE is jobbing fairly at a slight cut on manufacturers' quotations. From the hands of makers P&W morphine is held at $2.50 in eighths; from outside hands $2 45 is quoted as acceptable.

NAPHTHALINE is quiet and easy. Balls to arrive are offered at 3½c. Flake is held at 3 @ 3¼c.

OPIUM has undergone no changes of importance during the interval; and the markets present a dull and quiet appearance. The demand is lacking in spirit and prices as a consequence have receded a fraction, the quotation of the market now standing at $2.85 for cases; and this figure, it is stated, can be shaded upon a firm bid for quantities. The jobbing price is quoted $2 85 @ $2.90. Powdered is a trifle easier with sellers at $3 60 @ $3.65.

QUININE, foreign continues in firm position with a fair jobbing inquiry at the quoted range. Supplies in second hands are held at 23¾ @ 24c. regular terms, or 23½c. upon a cash basis. Domestic is firm upon the basis of 27½c. for large bulk.

SENNA LEAVES.—Alexandria siftings have been sold during the week to the extent of 2,000 lbs. at 6½c.; natural is firm at 18 @ 25c. Tinnivelly is active at 6 @ 18c. as to quality.

SOAP, Conti's, white, is in demand, but the spot stock is about exhausted. Forward purchases are being made at 9⅝ @ 9¾c.

VANILLA BEANS continue in moderate active request, the sales during the week marking in the aggregate a good distribution. Whole Mexican are offered at $6.50 @ $13 and the market is firm at these figures.

DYESTUFFS.

CUTCH is held with increased firmness with the quotation firm at 5¾. @ 6c. for SM. Inferior grades quoted at 4½ @ 5c.

DIVI DIVI has not changed from $55 @ $56, and we hear of numerous sales for consumption at this range.

GAMBIER is in better supply and prices are a shade easier, the store price having receded to 4¼ @ 4 30/100c. for steamer goods, and 4½ @ 4⅝c. for sail in a quantity way.

MADDER, Dutch, continues to meet with moderate inquiry at the range of 10½ @ 11c. for No. 1, and 9½ @ 10c. for No. 2 as to quantity.

NUTGALLS, Blue Aleppo, are selling moderately at the range of 13¾ @ 14¼c.

SUMAC, Sicily, is steadily held and jobbing sales are making at $72.50 @ $77.50.

CHEMICALS.

ACETATE OF LIME has met with increased inquiry during the week, and we are reported numerous sales for consumption at 90 @ 95c. for brown and $1.60 @ $1.75 for gray.

ARSENIC, white, continues to meet with a fair steady inquiry and the market is firm at 3¾c. Red Saxony held at 6¼ @ 6½c.

BLEACHING POWDER is dull, though no quotable change is announced. German is held at 2½c. and English 2¼ @ 2½c. as to quantity.

CARBOLIC ACID is neglected at the moment. Best grades English are held at 13c. and 20½c. for drums and bottles respectively, though German goods are offered down to 11c. and 17c.

CHLORATE OF POTASH is quiet at nominally unchanged prices. German crystals quoted at 14¼c. and English at 14½c.

BLUE VITRIOL is held in firm position, with 3⅝ @ 3¾c. quoted as inside in most instances; up to 3¾c. is asked for small lots.

CARBONATE OF AMMONIA is jobbing fairly at 8½c. in casks.

CAUSTIC SODA continues in fair demand. $2.50 @ 2.65 asked for 70 @ 74 per cent. according to test and quantity.

CITRIC ACID is dull at nominally 42½c. for barrels, and 42½ @ 43c. for kegs.

CREAM TARTAR is maintained steadily at 17½c. for crystals and powdered. Recent advices to hand from foreign markets indicate a decidedly stronger feeling for the crude material.

NITRATE OF SODA has been in active request, and the tone of the market is strong. We quote the range at $2.10 @ $2.12½.

OXALIC ACID is in moderate request and firm at 6⅝ @ 7c. for German and English as to quantity.

SAL AMMONIAC, white grain, German, has sold in a small way up to 7c.; we quote he range 6¾ @ 7c. as to quantity.

SAL SODA is passing out to consumers at 75 @ 85c. as to quality.

QUICKSILVER continues to offer at 44 @ 45c. with moderate sales at this range.